If you plan to submit a bid directly to the Department of Transportation

PREQUALIFICATION

Any contractor who desires to become pre-qualified to bid on work advertised by IDOT must submit the properly completed pre-qualification forms to the Bureau of Construction no later that 4:30 p.m. prevailing time twenty-one days prior to the letting of interest. This pre-qualification requirement applies to first time contractors, contractors renewing expired ratings, contractors maintaining continuous pre-qualification or contractors requesting revised ratings. To be eligible to bid, existing pre-qualification ratings must be effective through the date of letting.

REQUESTS FOR AUTHORIZATION TO BID

Contractors receiving paper plans and/or proposals who are wanting to bid on items included in a particular letting must submit the properly completed "Request for Proposal Forms and Plans & Request for Authorization to Bid" (BDE 124) or Contractors downloading plans and/or proposals who are wanting to bid on items included in a particular letting must submit the properly completed "Request for Authorization to Bid/or Not For Bid Status" (BDE 124INT)and the ORIGINAL "Affidavit of Availability" (BC 57) to the proper office no later than 4:30 p.m. prevailing time, three (3) days prior to the letting date.

WHO CAN BID ?

Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction.

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "Request for Proposal Forms and Plans"(BDE 124) or "Request for Authorization to Bid/or Not For Bid Status"(BDE 124INT) he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form**, approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial.

ABOUT AUTHORIZATION TO BID: Firms that have not received an authorization form within a reasonable time of complete and correct original document submittal should contact the department as to status. This is critical in the week before the letting. These documents must be received three days before the letting date. Firms unsure as to authorization status should call the Prequalification Section of the Bureau of Construction at the number listed at the end of these instructions.

ADDENDA: It is the contractor's responsibility to determine which, if any, addenda pertains to any project they may be bidding. Failure to incorporate all relevant addenda may cause the bid to be declared unacceptable. When the Department implements electronic **ONLY** Plans and Proposals it will not send addenda to individual plan holders. Each addendum will be placed with the electronic Plan and/or Proposal. Addenda will also be placed on the Addendum Checklist and each subscription service subscriber will be notified by e-mail of each addendum issued. The Internet is the Department's primary way of doing business. The subscription server e-mails are an added courtesy the Department provides. It is suggested that bidder check IDOT's website www.dot.state.il.us before submitting final bid information.

IDOT is not responsible for any e-mail related failures.
Questions may be directed to Jim Duncan at 217-782-7806 or duncahjr@nt.dot.state.il.us.

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

ABOUT SUBMITTING BIDS: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?

Questions Regarding	**Call**
Prequalification and/or Authorization to Bid	217/782-3413
Preparation and submittal of bids	217/782-7806
Mailing of plans and proposals	217/782-7806
Electronic plans and proposals	217/785-5875

ADDENDUMS TO THE PROPOSAL FORMS

Planholders should verify that they have received and incorporated the revisions prior to submitting their bid. If plans/proposals were requested/downloaded prior to the date of the addendum, an addendum package should have been mailed to the planholder or updated electronically on IDOT's website. If plans/proposals were ordered/downloaded after the date of the addendum, the plans/proposal package should already include all revisions and an identifying addendum sheet immediately after the proposal cover sheet. Failure by the bidder to include an addendum could result in a bid being rejected as irregular. If a planholder has not received an addendum within 5 days after the addendum date noted, they should call 217-782-7806.

RETURN WITH BID

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Proposal Submitted By
Name
Address
City

Letting March 5, 2004

BIDDERS NEED NOT RETURN THE ENTIRE PROPOSAL
(See instructions inside front cover)

NOTICE TO PROSPECTIVE BIDDERS
This proposal can be used for bidding purposes by only those companies that request and receive written AUTHORIZATION TO BID from IDOT's Central Bureau of Construction.
(SEE INSTRUCTIONS ON THE INSIDE OF COVER)

Notice To Bidders, Specifications, Proposal, Contract and Contract Bond

Illinois Department of Transportation

Springfield, Illinois 62764

Contract No. 93346
SANGAMON County
Section 98-00009-00-BR (Sherman)
Project HSR-D6(74)
Route MEREDITH DRIVE
District 6 Construction Funds

PLEASE MARK THE APPROPRIATE BOX BELOW:

☐ A Bid Bond is included.

☐ A Cashier's Check or a Certified Check is included

Prepared by

Checked by F

(Printed by authority of the State of Illinois)

INSTRUCTIONS

ABOUT IDOT PROPOSALS: All proposals issued by IDOT are potential bidding proposals. Each proposal contains all Certifications and Affidavits, a Proposal Signature Sheet and a Proposal Bid Bond required for Prime Contractors to submit a bid after written **Authorization to Bid** has been issued by IDOT's Central Bureau of Construction.

HOW MANY PROPOSALS SHOULD PROSPECTIVE BIDDERS REQUEST?: Prospective bidders should, prior to submitting their initial request for plans and proposals, determine their needs and request the total number of plans and proposals needed for each item requested. There will be a nonrefundable charge of $15 for each set of plans and specifications issued.

WHO CAN BID?: Bids will be accepted from only those companies that request and receive written **Authorization to Bid** from IDOT's Central Bureau of Construction. To request authorization, a potential bidder must complete and submit Part B of the Request for Proposal Forms and Plans & Request for Authorization to Bid form (BDE 124) and submit an original Affidavit of Availability (BC 57).

WHAT CONSTITUTES WRITTEN AUTHORIZATION TO BID?: When a prospective prime bidder submits a "Request for Proposal Forms and Plans" he/she must indicate at that time which items are being requested For Bidding purposes. Only those items requested For Bidding will be analyzed. After the request has been analyzed, the bidder will be issued a **Proposal Denial and/or Authorization Form,** approved by the Central Bureau of Construction, that indicates which items have been approved For Bidding. If **Authorization to Bid** cannot be approved, the **Proposal Denial and/or Authorization Form** will indicate the reason for denial. If a contractor has requested to bid but has not received a **Proposal Denial and/or Authorization Form,** they should contact the Central Bureau of Construction in advance of the letting date.

WHAT MUST BE INCLUDED WHEN BIDS ARE SUBMITTED?: Bidders need not return the entire proposal when bids are submitted. That portion of the proposal that must be returned includes the following:

1. All documents from the Proposal Cover Sheet through the Proposal Bid Bond
2. Other special documentation and/or information that may be required by the contract special provisions

All proposal documents, including Proposal Guaranty Checks or Proposal Bid Bonds, should be stapled together to prevent loss when bids are processed by IDOT personnel.

ABOUT SUBMITTING BIDS: It is recommended that bidders deliver bids in person to insure they arrive at the proper location prior to the time specified for the receipt of bids. Any bid received at the place of letting after the time specified will not be accepted.

WHO SHOULD BE CALLED IF ASSISTANCE IS NEEDED?

Questions Regarding	Call
Prequalification and/or Authorization to Bid	217/782-3413
Preparation and submittal of bids	217/782-7806
Mailing of plans and proposals	217/782-7806

RETURN WITH BID

Illinois Department of Transportation

PROPOSAL

TO THE DEPARTMENT OF TRANSPORTATION

1. Proposal of _____

_____

for the improvement identified and advertised for bids in the Invitation for Bids as:

Contract No. 93346
SANGAMON County
Section 98-00009-00-BR (Sherman)
Project HSR-D6(74)
Route MEREDITH DRIVE
District 6 Construction Funds

0.45 mile road construction on Meredith Drive extending Old Tipton School Road from Business Loop I-55 to First Street and construction of a grade separation carrying the Union Pacific railroad over Meredith Drive, 0.205 mile construction on BUSINESS LOOP I-55 and 0.416 mile construction of Shoofly Track all in Sherman.

2. The undersigned bidder will furnish all labor, material and equipment to complete the above described project in a good and workmanlike manner as provided in the contract documents provided by the Department of Transportation. This proposal will become part of the contract and the terms and conditions contained in the contract documents shall govern performance and payments.

3. **ASSURANCE OF EXAMINATION AND INSPECTION/WAIVER.** The undersigned further declares that he/she has carefully examined the proposal, plans, specifications, form of contract and contract bond, and special provisions, and that he/she has inspected in detail the site of the proposed work, and that he/she has familiarized themselves with all of the local conditions affecting the contract and the detailed requirements of construction, and understands that in making this proposal he/she waives all right to plead any misunderstanding regarding the same.

4. **EXECUTION OF CONTRACT AND CONTRACT BOND.** The undersigned further agrees to execute a contract for this work and present the same to the department within fifteen (15) days after the contract has been mailed to him/her. The undersigned further agrees that he/she and his/her surety will execute and present within fifteen (15) days after the contract has been mailed to him/her contract bond satisfactory to and in the form prescribed by the Department of Transportation, in the penal sum of the full amount of the contract, guaranteeing the faithful performance of the work in accordance with the terms of the contract.

5. **PROPOSAL GUARANTY.** Accompanying this proposal is either a bid bond on the department form, executed by a corporate surety company satisfactory to the department, or a proposal guaranty check consisting of a bank cashier's check or a properly certified check for not less than 5 per cent of the amount bid or for the amount specified in the following schedule:

Amount of Bid			Proposal Guaranty	Amount of Bid			Proposal Guaranty
Up to		$5,000	$150	$2,000,000	to	$3,000,000	$100,000
$5,000	to	$10,000	$300	$3,000,000	to	$5,000,000	$150,000
$10,000	to	$50,000	$1,000	$5,000,000	to	$7,500,000	$250,000
$50,000	to	$100,000	$3,000	$7,500,000	to	$10,000,000	$400,000
$100,000	to	$150,000	$5,000	$10,000,000	to	$15,000,000	$500,000
$150,000	to	$250,000	$7,500	$15,000,000	to	$20,000,000	$600,000
$250,000	to	$500,000	$12,500	$20,000,000	to	$25,000,000	$700,000
$500,000	to	$1,000,000	$25,000	$25,000,000	to	$30,000,000	$800,000
$1,000,000	to	$1,500,000	$50,000	$30,000,000	to	$35,000,000	$900,000
$1,500,000	to	$2,000,000	$75,000	over		$35,000,000	$1,000,000

Bank cashier's checks or properly certified checks accompanying proposals shall be made payable to the Treasurer, State of Illinois, when the state is awarding authority; the county treasurer, when a county is the awarding authority; or the city, village, or town treasurer, when a city, village, or town is the awarding authority.

If a combination bid is submitted, the proposal guaranties which accompany the individual proposals making up the combination will be considered as also covering the combination bid.

The amount of the proposal guaranty check is _____ $( ). If this proposal is accepted and the undersigned shall fail to execute a contract bond as required herein, it is hereby agreed that the amount of the proposal guaranty shall become the property of the State of Illinois, and shall be considered as payment of damages due to delay and other causes suffered by the State because of the failure to execute said contract and contract bond; otherwise, the bid bond shall become void or the proposal guaranty check shall be returned to the undersigned.

Attach Cashier's Check or Certified Check Here

In the event that one proposal guaranty check is intended to cover two or more proposals, the amount must be equal to the sum of the proposal guaranties which would be required for each individual proposal. If the guaranty check is placed in another proposal, state below where it may be found.

The proposal guaranty check will be found in the proposal for:

Item _____

Section No. _____

County _____

Mark the proposal cover sheet as to the type of proposal guaranty submitted.

BD 354 (Rev. 11/2001)

6. **COMBINATION BIDS.** The undersigned further agrees that if awarded the contract for the sections contained in the following combination, he/she will perform the work in accordance with the requirements of each individual proposal comprising the combination bid specified in the schedule below, and that the combination bid shall be prorated against each section in proportion to the bid submitted for the same. If an error is found to exist in the gross sum bid for one or more of the individual sections included in a combination, the combination bid shall be corrected as provided in the specifications.

When a combination bid is submitted, the schedule below must be completed in each proposal comprising the combination.

If alternate bids are submitted for one or more of the sections comprising the combination, a combination bid must be submitted for each alternate.

Schedule of Combination Bids

Combination No.	Sections Included in Combination	Combination Bid Dollars	Cents

7. **SCHEDULE OF PRICES.** The undersigned bidder submits herewith, in accordance with the rules and instructions, a schedule of prices for the items of work for which bids are sought. The unit prices bid are in U.S. dollars and cents, and all extensions and summations have been made. The bidder understands that the quantities appearing in the bid schedule are approximate and are provided for the purpose of obtaining a gross sum for the comparison of bids. If there is an error in the extension of the unit prices, the unit prices shall govern. Payment to the contractor awarded the contract will be made only for actual quantities of work performed and accepted or materials furnished according to the contract. The scheduled quantities of work to be done and materials to be furnished may be increased, decreased or omitted as provided elsewhere in the contract.

8. **CERTIFICATE OF AUTHORITY.** The undersigned bidder, if a business organized under the laws of another State, assures the Department that it will furnish a copy of its certificate of authority to do business in the State of Illinois with the return of the executed contract and bond. Failure to furnish the certificate within the time provided for execution of an awarded contract may be cause for cancellation of the award and forfeiture of the proposal guaranty to the State.

Contract No. 93346

Route Meredith Drive

Section 98-00009-00-BR (Sherman)

County Sangamon

Coded Pay Items. The pay items in the Schedule of Prices are abbreviated and have code numbers assigned. The complete wording of the pay items, the abbreviations and the code numbers used in the Schedule of Prices are listed below, for pay items not listed in code books.

Pay Items	Unit	Abbreviation	Code No.
VIDEO VEHICLE DETECTION SYSTEM	EACH	VIDEO VEH DET SYS	X0320872
BRIDGE FENCE RAILING, PARAPET MOUNTED	FOOT	BR FENCE RAIL PAR MTD	X0321017
BRIDGE DRAINAGE SYSTEM	L SUM	BRIDGE DRAINAGE SYS	X0696000
PVC CONDUIT IN TRENCH 4" (SCHEDULE #80)	FOOT	PVC CON T 4 (S80)	X0934000
BITUMINOUS BASE COURSE SUPERPAVE 7"	SQ YD	BIT BC SUPER 7	X3550400
BITUMINOUS BASE COURSE SUPERPAVE 9"	SQ YD	BIT BC SUPER 9	X3550600
POLYMERIZED BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, MIX "D", N70	TON	P BCSC SUPER "D" N70	X4066526
BITUMINOUS CNCRETE BINDER COURSE, SUPERPAVE, IL-19.0, N70	TON	BCBC SUP IL-19.0 N70	X4066616
LEVELING BINDER (MACHINE METHOD), SUPERPAVE N70	TON	LEV BIND MM SUPER N70	X4066770
INLETS, TYPE A, TYPE 3V FRAME & GRATE	EACH	INLETS TA T3V F&G	X6020074
SIGNAL HEAD, ALUMINUM, LED, 1-FACE, 3-SECTION, MAST ARM MOUNTED	EACH	SH A LED 1F 3S MAM	X8805020
SIGNAL HEAD, ALUMINUM, LED, 1-FACE, 5-SECTION, MAST ARM MOUNTED	EACH	SH A LED 1F 5S MAM	X8805050
SIGNAL HEAD, ALUMINUM, LED, 3-FACE, 5-SECTION, BRACKET MOUNTED	EACH	SH A LED 3F 5S BM	X8805220
SIGNAL HEAD, ALUMINUM, LED, 3-FACE, 2-3 SECTION, 1-5 SECTION, BRACKET MOUNTED	EACH	SH A LED 3F 2-3, 1-5BM	X8805250
SIGNAL HEAD, ALUMINUM, LED, 3-FACE, 1-3 SECTION, 2-5 SECTION, BRACKET MOUNTED	EACH	SH A LED 3F 1-3, 2-5BM	X8805260
STORM SEWER CONNECTION, SPECIAL	EACH	STORM SEWER CONN SPL	XX000717
MANHOLE TO BE ADJUSTED (4.0 FT)	EACH	MANHOLE ADJUSTMNT 4'	XX005641
SHOOFLY TRACK INSTALLATION	FOOT	SHOOFLY TRACK INST	XX003288
REMOVE SHOOFLY TRACK	FOOT	REMOVE SHOOFLY TRACK	XX003289
REMOVE MAINLINE TRACKWORK	L SUM	REM MAINLINE TRKWRK	XX003290
INSTALL TRACKWORK ON NEW BRIDGE AND APPROACH	L SUM	INST TW NEW BR & APR	XX003291
WATER MAIN ENCASEMENT	FOOT	WATER MAIN ENCASEMENT	XX003345

CONNECTION TO EXISTING WATER MAINS (PRESSURE) 6"	EACH	CONN EX W MN P 6	XX003537
RESTRICTED DEPTH CATCH BASINS, 4' DIAMETER, TYPE 3V FRAME AND GRATE	EACH	RD CB 4 DIA T3F&G	XX004636
RESTRICTED DEPTH CATCH BASINS, 3' DIAMETER, TYPE 3V FRAME AND GRATE	EACH	RD CB 3 DIA T3VF&G	XX005640
CATCH BASINS, TYPE D, 3' DIAMETER, TYPE 3V FRAME AND GRATE	EACH	CB TD 3 DIA T3V F & G	XX005086
CATCH BASINS, TYPE D, 3' DIAMETER, TYPE 11V FRAME AND GRATE	EACH	CB TD 3 DIA T11V F&G	XX005087
FURNISHING AND ERECTING PRECAST PRESTRESSED CONCRETE I-BEAMS, 48" (SPECIAL)	FOOT	F&E PPC I-BM 48 SPL	XX005638
MANHOLES SANITARY 4' DIAMETER, 10-12 FT DEPTH, BOLT DOWN, WATER TIGHT, FRAME & COVER	EACH	MHS 4 10-12D BD WTFC	XX003549

XRE

COUNTY NAME	CODE	DIST	SECTION NUMBER	PROJECT NUMBER	ROUTE
SANGAMON	167	06	98-00009-00-BR (SHERMAN)	HSR-00D6/074/000	MEREDITH DRIVE

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
XX000717	STORM SEWER CONN SPL	EACH	1.000	X			=		
XX003288	SHOOFLY TRACK INST	FOOT	1,478.000	X			=		
XX003289	REMOVE SHOOFLY TRACK	FOOT	1,478.000	X			=		
XX003290	REM MAINLINE TRKWRK	L SUM	1.000	X			=		
XX003291	INST TW NEW BR & APR	L SUM	1.000	X			=		
XX003345	WATER MAIN ENCASEMEMT	FOOT	100.000	X			=		
XX003537	CONN EX W MN P 6	EACH	2.000	X			=		
XX003549	MHS 4 10-12D BD WTFC	EACH	1.000	X			=		
XX004636	RD CB 4 DIA T3VF&G	EACH	2.000	X			=		
XX005086	CB TD 3 DIA T3V F&G	EACH	2.000	X			=		
XX005087	CB TD 3 DIA T11V F&G	EACH	2.000	X			=		
XX005638	F&E PPC I-BM 48 SPL	FOOT	207.000	X			=		
XX005640	RD CB 3 DIA T3VF&G	EACH	5.000	X			=		
XX005641	MANHOLE ADJUSTMNT 4'	EACH	3.000	X			=		
X0320872	VIDEO VEH DET SYS	EACH	1.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
X0321017	BR FENCE RAIL PAR MTD	FOOT	323.000	X			=		
X0696000	BRIDGE DRAINAGE SYS	L SUM	1.000	X			=		
X0934000	PVC CON T 4 (S80)	FOOT	268.000	X			=		
X3550400	BIT BC SUPER 7	SQ YD	8,450.000	X			=		
X3550600	BIT BC SUPER 9	SQ YD	2,070.000	X			=		
X4066526	P BCSC SUPER "D" N70	TON	1,408.000	X			=		
X4066616	BCBC SUP IL-19.0 N70	TON	884.000	X			=		
X4066770	LEV BIND MM SUPER N70	TON	248.000	X			=		
X6020074	INLETS TA T3V F&G	EACH	13.000	X			=		
X8805020	SH A LED 1F 3S MAM	EACH	3.000	X			=		
X8805050	SH A LED 1F 5S MAM	EACH	3.000	X			=		
X8805220	SH A LED 3F 5S BM	EACH	1.000	X			=		
X8805250	SH A LED 3F 2-3,1-5BM	EACH	2.000	X			=		
X8805260	SH A LED 3F 1-3,2-5BM	EACH	1.000	X			=		
Z0000990	AGG FOR TEMP ACCESS	TON	1.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
Z0008236	DRIL SHAFT/SOIL 36	FOOT	114.000			X =		
Z0008248	DRIL SHAFT/SOIL 48	FOOT	66.000			X =		
Z0008336	DRIL SHAFT/ROCK 36	FOOT	40.000			X =		
Z0008348	DRIL SHAFT/ROCK 48	FOOT	60.000			X =		
Z0013798	CONSTRUCTION LAYOUT	L SUM	1.000			X =		
Z0022800	FENCE REMOVAL	FOOT	4,500.000			X =		
Z0038500	PERMANENT BARRICADES	EACH	6.000			X =		
Z0048665	RR PROT LIABILITY INS	L SUM	1.000			X =		
Z0056900	SAN SEW 8	FOOT	819.000			X =		
Z0069800	SUB-BALLAST	TON	5,011.000			X =		
20100210	TREE REMOV OVER 15	UNIT	36.000			X =		
20100500	TREE REMOV ACRES	ACRE	4.000			X =		
20200100	EARTH EXCAVATION	CU YD	43,955.000			X =		
20400800	FURNISHED EXCAV	CU YD	13,999.000			X =		
20700110	POROUS GRAN EMBANK	TON	1,500.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
20800150	TRENCH BACKFILL	CU YD	256.000			X =		
20900320	POROUS GRAN BACK SPEC	TON	72.000			X =		
25000200	SEEDING CL 2	ACRE	9.000			X =		
25000400	NITROGEN FERT NUTR	POUND	810.000			X =		
25000500	PHOSPHORUS FERT NUTR	POUND	810.000			X =		
25000600	POTASSIUM FERT NUTR	POUND	810.000			X =		
25100120	MULCH METHOD 2	TON	18.000			X =		
28000250	TEMP EROS CONTR SEED	POUND	2,000.000			X =		
28000300	TEMP DITCH CHECKS	EACH	32.000			X =		
28000400	PERIMETER EROS BAR	FOOT	1,444.000			X =		
28000500	INLET & PIPE PROTECT	EACH	6.000			X =		
35100100	AGG BASE CSE A	TON	2,876.000			X =		
40200100	AGG SURF CSE A	TON	114.000			X =		
40600200	BIT MATLS PR CT	TON	22.300			X =		
44000006	BIT SURF REM 1 1/2	SQ YD	1,042.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
44000030	BIT SURF REM VAR DP	SQ YD	5,781.000			X =		
44004250	PAVED SHLD REMOVAL	SQ YD	1,050.000			X =		
48202400	BIT SHLD SUPER 6	SQ YD	824.000			X =		
50102400	CONC REM	CU YD	3.000			X =		
50200100	STRUCTURE EXCAVATION	CU YD	273.000			X =		
50300225	CONC STRUCT	CU YD	219.700			X =		
50300255	CONC SUP-STR	CU YD	205.200			X =		
50300516	ELAST BRNG ASY T1 SPL	EACH	6.000			X =		
50500405	F & E STRUCT STEEL	POUND	183,380.000			X =		
50800105	REINFORCEMENT BARS	POUND	203,560.000			X =		
51205200	TEMP SHT PILING	SQ FT	162.000			X =		
51500100	NAME PLATES	EACH	1.000			X =		
54002040	EXPAN BOLTS 3/4 X 6	EACH	43.000			X =		
54003000	CONC BOX CUL	CU YD	301.500			X =		
542A0223	P CUL CL A 1 18	FOOT	84.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
542A1081	P CUL CL A 2 36	FOOT	84.000			X =		
5421A012	P CUL CL A 1 12 TEMP	FOOT	61.000			X =		
54213657	PRC FLAR END SEC 12	EACH	7.000			X =		
54213663	PRC FLAR END SEC 18	EACH	8.000			X =		
54213666	PRC FLAR END SEC 21	EACH	1.000			X =		
54213681	PRC FLAR END SEC 36	EACH	4.000			X =		
550A0050	STORM SEW CL A 1 12	FOOT	726.000			X =		
550A0070	STORM SEW CL A 1 15	FOOT	121.000			X =		
550A0090	STORM SEW CL A 1 18	FOOT	160.000			X =		
550A0110	STORM SEW CL A 1 21	FOOT	148.000			X =		
550A0340	STORM SEW CL A 2 12	FOOT	355.000			X =		
550A0380	STORM SEW CL A 2 18	FOOT	509.000			X =		
550A0450	STORM SEW CL A 2 36	FOOT	141.000			X =		
550A1260	STORM SEW CL A 5 18	FOOT	93.000			X =		
56100800	WATER MAIN 10	FOOT	2,400.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
56105100	WATER VALVES 10	EACH	2.000	X			=		
56400600	FIRE HYDRANTS	EACH	6.000	X			=		
58000110	MEMBRANE WATERPRF SPL	SQ FT	3,345.000	X			=		
60100925	PIPE DRAINS 8	FOOT	42.000	X			=		
60212300	CB TD 4 DIA T8G	EACH	1.000	X			=		
60218400	MAN TA 4 DIA T1F CL	EACH	3.000	X			=		
60221100	MAN TA 5 DIA T1F CL	EACH	1.000	X			=		
60224600	RD MAN 4 DIA T1F CL	EACH	3.000	X			=		
60228110	MAN SAN 4 DIA T1F CL	EACH	5.000	X			=		
60228300	DROP SAN MAN T1F CL	EACH	1.000	X			=		
60236200	INLETS TA T8G	EACH	1.000	X			=		
60236825	INLETS TA T11V F&G	EACH	4.000	X			=		
60605000	COMB CC&G TB6.24	FOOT	5,056.000	X			=		
60609200	COMB CC&G TM6.12	FOOT	1,306.000	X			=		
60618300	CONC MEDIAN SURF 4	SQ FT	1,352.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
60622800	CONC MED TSM6.12	SQ FT	3,835.000	X			=		
60900515	CONC THRUST BLOCKS	EACH	1.000	X			=		
63000000	SPBGR TY A	FOOT	379.000	X			=		
63100169	TR BAR TRM T1 SPL FLR	EACH	1.000	X			=		
63200310	GUARDRAIL REMOV	FOOT	403.000	X			=		
66500105	WOV W FENCE 4	FOOT	2,244.000	X			=		
67000400	ENGR FIELD OFFICE A	CAL MO	12.000	X			=		
70100205	TRAF CONT-PROT 701401	EACH	1.000	X			=		
70100450	TRAF CONT-PROT 701201	L SUM	1.000	X			=		
70100700	TRAF CONT-PROT 701406	L SUM	1.000	X			=		
70102635	TR CONT & PROT 701701	L SUM	1.000	X			=		
70300100	SHORT-TERM PAVT MKING	FOOT	642.000	X			=		
70300210	TEMP PVT MK LTR & SYM	SQ FT	228.000	X			=		
70300230	TEMP PVT MK LINE 5	FOOT	3,728.000	X			=		
70300240	TEMP PVT MK LINE 6	FOOT	1,657.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
70300250	TEMP PVT MK LINE 8	FOOT	850.000			X =		
70300260	TEMP PVT MK LINE 12	FOOT	68.000			X =		
70300280	TEMP PVT MK LINE 24	FOOT	177.000			X =		
70301000	WORK ZONE PAVT MK REM	SQ FT	214.000			X =		
72000200	SIGN PANEL T2	SQ FT	21.000			X =		
72000300	SIGN PANEL T3	SQ FT	48.400			X =		
78000100	THPL PVT MK LTR & SYM	SQ FT	32.000			X =		
78000300	THPL PVT MK LINE 5	FOOT	6,696.000			X =		
78000400	THPL PVT MK LINE 6	FOOT	1,438.000			X =		
78000600	THPL PVT MK LINE 12	FOOT	27.000			X =		
78003100	PREF PL PM TB LTR-SYM	SQ FT	196.000			X =		
78003120	PREF PL PM TB LINE 5	FOOT	490.000			X =		
78003130	PREF PL PM TB LINE 6	FOOT	250.000			X =		
78003140	PREF PL PM TB LINE 8	FOOT	980.000			X =		
78003180	PREF PL PM TB LINE 24	FOOT	177.000			X =		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
78100100	RAISED REFL PAVT MKR	EACH	118.000			=		
78200410	GUARDRAIL MKR TYPE A	EACH	5.000			=		
78201000	TERMINAL MARKER - DA	EACH	1.000			=		
80500100	SERV INSTALL TY A	EACH	1.000			=		
80801400	W POLE 25 CL 4	EACH	1.000			=		
81012600	CON T 2 PVC	FOOT	2,655.000			=		
81012800	CON T 3 PVC	FOOT	29.000			=		
81013000	CON T 4 PVC	FOOT	95.000			=		
81021570	CON AUGERED 3 PVC	FOOT	142.000			=		
81021590	CON AUGERED 4 PVC	FOOT	306.000			=		
81400100	HANDHOLE	EACH	6.000			=		
81400300	DBL HANDHOLE	EACH	1.000			=		
81500200	TR & BKFIL F ELECT WK	FOOT	2,780.000			=		
85700200	FAC T4 CAB	EACH	1.000			=		
86400100	TRANSCEIVER - FIB OPT	EACH	1.000			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY		UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
87100110	FO CAB C 62.5/125 6F	FOOT	2,761.000	X			=		
87301245	ELCBL C SIGNAL 14 5C	FOOT	860.000	X			=		
87301255	ELCBL C SIGNAL 14 7C	FOOT	945.000	X			=		
87301265	ELCBL C SIGNAL 14 9C	FOOT	380.000	X			=		
87301275	ELCBL C SIGNAL 14 12C	FOOT	890.000	X			=		
87301525	ELCBL C LEAD 18 6PR	FOOT	1,130.000	X			=		
87301805	ELCBL C SERV 6 2C	FOOT	95.000	X			=		
87502500	TS POST GALVS 16	EACH	1.000	X			=		
87702830	STL COMB MAA&P 20	EACH	1.000	X			=		
87702860	STL COMB MAA&P 26	EACH	1.000	X			=		
87702920	STL COMB MAA&P 38	EACH	2.000	X			=		
87800100	CONC FDN TY A	FOOT	4.000	X			=		
87800200	CONC FDN TY D	FOOT	4.000	X			=		
87800400	CONC FDN TY E 30D	FOOT	60.000	X			=		
87900200	DRILL EX HANDHOLE	EACH	1.000	X			=		

ITEM NUMBER	PAY ITEM DESCRIPTION	UNIT OF MEASURE	QUANTITY	UNIT PRICE DOLLARS	UNIT PRICE CENTS		TOTAL PRICE DOLLARS	TOTAL PRICE CTS
88200100	TS BACKPLATE	EACH	6.000			X =		
					TOTAL	$		

NOTE:

1. EACH PAY ITEM SHOULD HAVE A UNIT PRICE AND A TOTAL PRICE.

2. THE UNIT PRICE SHALL GOVERN IF NO TOTAL PRICE IS SHOWN OR IF THERE IS A DISCREPANCY BETWEEN THE PRODUCT OF THE UNIT PRICE MULTIPLIED BY THE QUANTITY.

3. IF A UNIT PRICE IS OMITTED, THE TOTAL PRICE WILL BE DIVIDED BY THE QUANTITY IN ORDER TO ESTABLISH A UNIT PRICE.

4. A BID MAY BE DECLARED UNACCEPTABLE IF NEITHER A UNIT PRICE NOR A TOTAL PRICE IS SHOWN.

RETURN WITH BID

STATE REQUIRED ETHICAL STANDARDS GOVERNING CONTRACT PROCUREMENT: ASSURANCES, CERTIFICATIONS AND DISCLOSURES

I. GENERAL

A. Article 50 of the Illinois Procurement Code establishes the duty of all State chief procurement officers, State purchasing officers, and their designees to maximize the value of the expenditure of public moneys in procuring goods, services, and contracts for the State of Illinois and to act in a manner that maintains the integrity and public trust of State government. In discharging this duty, they are charged by law to use all available information, reasonable efforts, and reasonable actions to protect, safeguard, and maintain the procurement process of the State of Illinois.

B. In order to comply with the provisions of Article 50 and to carry out the duty established therein, all bidders are to adhere to ethical standards established for the procurement process, and to make such assurances, disclosures and certifications required by law. By execution of the Proposal Signature Sheet, the bidder indicates that each of the mandated assurances has been read and understood, that each certification is made and understood, and that each disclosure requirement has been understood and completed.

C. In addition to all other remedies provided by law, failure to comply with any assurance, failure to make any disclosure or the making of a false certification shall be grounds for termination of the contract and the suspension or debarment of the bidder.

II. ASSURANCES

A. The assurances hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous assurance, and the surety providing the performance bond shall be responsible for the completion of the contract.

B. Felons

1. The Illinois Procurement Code provides:

Section 50-10. Felons. Unless otherwise provided, no person or business convicted of a felony shall do business with the State of Illinois or any state agency from the date of conviction until 5 years after the date of completion of the sentence for that felony, unless no person held responsible by a prosecutorial office for the facts upon which the conviction was based continues to have any involvement with the business.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-10.

C. Conflicts of Interest

1. The Illinois Procurement Code provides in pertinent part:

Section 50-13. Conflicts of Interest.

(a) Prohibition. It is unlawful for any person holding an elective office in this State, holding a seat in the General Assembly, or appointed to or employed in any of the offices or agencies of state government and who receives compensation for such employment in excess of 60% of the salary of the Governor of the State of Illinois, or who is an officer or employee of the Capital Development Board or the Illinois Toll Highway Authority, or who is the spouse or minor child of any such person to have or acquire any contract, or any direct pecuniary interest in any contract therein, whether for stationery, printing, paper, or any services, materials, or supplies, that will be wholly or partially satisfied by the payment of funds appropriated by the General Assembly of the State of Illinois or in any contract of the Capital Development Board or the Illinois Toll Highway authority.

(b) Interests. It is unlawful for any firm, partnership, association or corporation, in which any person listed in subsection (a) is entitled to receive (i) more than 7 1/2% of the total distributable income or (ii) an amount in excess of the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(c) Combined interests. It is unlawful for any firm, partnership, association, or corporation, in which any person listed in subsection (a) together with his or her spouse or minor children is entitled to receive (i) more than 15%, in the aggregate, of the total distributable income or (ii) an amount in excess of 2 times the salary of the Governor, to have or acquire any such contract or direct pecuniary interest therein.

(d) Securities. Nothing in this Section invalidates the provisions of any bond or other security previously offered or to be offered for sale or sold by or for the State of Illinois.

(e) Prior interests. This Section does not affect the validity of any contract made between the State and an officer or employee of the State or member of the General Assembly, his or her spouse, minor child or any combination of those persons if that contract was in existence before his or her election or employment as an officer, member, or employee. The contract is voidable, however, if it cannot be completed within 365 days after the officer, member, or employee takes office or is employed.

The current salary of the Governor is $150,700.00. Sixty percent of the salary is $90,420.00.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-13, or that an effective exemption has been issued by the Board of Ethics to any individual subject to the Section 50-13 prohibitions pursuant to the provisions of Section 50-20 of the Code and Executive Order Number 3 (1998). Information concerning the exemption process is available from the Department upon request.

D. Negotiations

1. The Illinois Procurement Code provides in pertinent part:

Section 50-15. Negotiations.

(a) It is unlawful for any person employed in or on a continual contractual relationship with any of the offices or agencies of State government to participate in contract negotiations on behalf of that office or agency with any firm, partnership, association, or corporation with whom that person has a contract for future employment or is negotiating concerning possible future employment.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-15, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

E. Inducements

1. The Illinois Procurement Code provides:

Section 50-25. Inducement. Any person who offers or pays any money or other valuable thing to any person to induce him or her not to bid for a State contract or as recompense for not having bid on a State contract is guilty of a Class 4 felony. Any person who accepts any money or other valuable thing for not bidding for a State contract or who withholds a bid in consideration of the promise for the payment of money or other valuable thing is guilty of a Class 4 felony.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-25, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

F. Revolving Door Prohibition

1. The Illinois Procurement Code provides:

Section 50-30. Revolving door prohibition. Chief procurement officers, associate procurement officers, State purchasing officers, their designees whose principal duties are directly related to State procurement, and executive officers confirmed by the Senate are expressly prohibited for a period of 2 years after terminating an affected position from engaging in any procurement activity relating to the State agency most recently employing them in an affected position for a period of at least 6 months. The prohibition includes, but is not limited to: lobbying the procurement process; specifying; bidding; proposing bid, proposal, or contract documents; on their own behalf or on behalf of any firm, partnership, association, or corporation. This Section applies only to persons who terminate an affected position on or after January 15, 1999.

2. The bidder assures the Department that the award and execution of the contract would not cause a violation of Section 50-30, and that the bidder has no knowledge of any facts relevant to the kinds of acts prohibited therein.

G. Reporting Anticompetitive Practices

1. The Illinois Procurement Code provides:

Section 50-40. Reporting anticompetitive practices. When, for any reason, any vendor, bidder, contractor, chief procurement officer, State purchasing officer, designee, elected official, or State employee suspects collusion or other anticompetitive practice among any bidders, offerors, contractors, proposers, or employees of the State, a notice of the relevant facts shall be transmitted to the Attorney General and the chief procurement officer.

2. The bidder assures the Department that it has not failed to report any relevant facts concerning the practices addressed in Section 50-40 which may involve the contract for which the bid is submitted.

H. Confidentiality

1. The Illinois Procurement Code provides:

Section 50-45. Confidentiality. Any chief procurement officer, State purchasing officer, designee, or executive officer who willfully uses or allows the use of specifications, competitive bid documents, proprietary competitive information, proposals, contracts, or selection information to compromise the fairness or integrity of the procurement, bidding, or contract process shall be subject to immediate dismissal, regardless of the Personnel code, any contract, or any collective bargaining agreement, and may in addition be subject to criminal prosecution.

2. The bidder assures the Department that it has no knowledge of any fact relevant to the practices addressed in Section 50-45 which may involve the contract for which the bid is submitted.

I. Insider Information

1. The Illinois Procurement Act provides:

Section 50-50. Insider information. It is unlawful for any current or former elected or appointed State official or State employee to knowingly use confidential information available only by virtue of that office or employment for actual or anticipated gain for themselves or another person.

2. The bidder assures the Department that it has no knowledge of any facts relevant to the practices addressed in Section 50-50 which may involve the contract for which the bid is submitted.

III. CERTIFICATIONS

A. The certifications hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous certification, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Bribery

1. The Illinois Procurement Code provides:

Section 50-5. Bribery.

(a) Prohibition. No person or business shall be awarded a contract or subcontract under this Code who:

(1) has been convicted under the laws of Illinois or any other state of bribery or attempting to bribe an officer or employee of the State of Illinois or any other state in that officer's or employee's official capacity; or

(2) has made an admission of guilt of that conduct that is a matter of record but has not been prosecuted for that conduct.

(b) Businesses. No business shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of the business if the employee or agent is no longer employed by the business and:

(1) the business has been finally adjudicated not guilty; or

(2) the business demonstrates to the governmental entity with which it seeks to contract, and that entity finds that the commission of the offense was not authorized, requested, commanded, or performed by a director, officer, or high managerial agent on behalf of the business as provided in paragraph (2) of subsection (a) of Section 5-4 of the Criminal Code of 1961.

(c) Conduct on behalf of business. For purposes of this Section, when an official, agent, or employee of a business committed the bribery or attempted bribery on behalf of the business and in accordance with the direction or authorization of a responsible official of the business, the business shall be chargeable with the conduct.

(d) Certification. Every bid submitted to and contract executed by the State shall contain a certification by the contractor that the contractor is not barred from being awarded a contract or subcontract under this Section. A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

2. The bidder certifies that it is not barred from being awarded a contract under Section 50.5.

C. Educational Loan

1. Section 3 of the Educational Loan Default Act provides:

§ 3. No State agency shall contract with an individual for goods or services if that individual is in default, as defined in Section 2 of this Act, on an educational loan. Any contract used by any State agency shall include a statement certifying that the individual is not in default on an educational loan as provided in this Section.

2. The bidder, if an individual as opposed to a corporation, partnership or other form of business organization, certifies that the bidder is not in default on an educational loan as provided in Section 3 of the Act.

D. Bid-Rigging/Bid Rotating

1. Section 33E-11 of the Criminal Code of 1961 provides:

§ 33E-11. (a) Every bid submitted to and public contract executed pursuant to such bid by the State or a unit of local government shall contain a certification by the prime contractor that the prime contractor is not barred from contracting with any unit of State or local government as a result of a violation of either Section 33E-3 or 33E-4 of this Article. The State and units of local government shall provide the appropriate forms for such certification.

(b) A contractor who makes a false statement, material to the certification, commits a Class 3 felony.

A violation of Section 33E-3 would be represented by a conviction of the crime of bid-rigging which, in addition to Class 3 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be barred for 5 years from the date of conviction from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

A violation of Section 33E-4 would be represented by a conviction of the crime of bid-rotating which, in addition to Class 2 felony sentencing, provides that any person convicted of this offense or any similar offense of any state or the United States which contains the same elements as this offense shall be permanently barred from contracting with any unit of State or local government. No corporation shall be barred from contracting with any unit of State or local government as a result of a conviction under this Section of any employee or agent of such corporation if the employee so convicted is no longer employed by the corporation and: (1) it has been finally adjudicated not guilty or (2) if it demonstrates to the governmental entity with which it seeks to contract and that entity finds that the commission of the offense was neither authorized, requested, commanded, nor performed by a director, officer or a high managerial agent in behalf of the corporation.

2. The bidder certifies that it is not barred from contracting with the Department by reason of a violation of either Section 33E-3 or Section 33E-4.

E. International Anti-Boycott

1. Section 5 of the International Anti-Boycott Certification Act provides:

§ 5. State contracts. Every contract entered into by the State of Illinois for the manufacture, furnishing, or purchasing of supplies, material, or equipment or for the furnishing of work, labor, or services, in an amount exceeding the threshold for small purchases according to the purchasing laws of this State or $10,000.00, whichever is less, shall contain certification, as a material condition of the contract, by which the contractor agrees that neither the contractor nor any substantially-owned affiliated company is participating or shall participate in an international boycott in violation of the provisions of the U.S. Export Administration Act of 1979 or the regulations of the U.S. Department of Commerce promulgated under that Act.

2. The bidder makes the certification set forth in Section 5 of the Act.

F. Drug Free Workplace

1. The Illinois "Drug Free Workplace Act" applies to this contract and it is necessary to comply with the provisions of the "Act" if the contractor is a corporation, partnership, or other entity (including a sole proprietorship) which has 25 or more employees.

2. The bidder certifies that if awarded a contract in excess of $5,000 it will provide a drug free workplace by:

(a) Publishing a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession or use of a controlled substance, including cannabis, is prohibited in the contractor's workplace; specifying the actions that will be taken against employees for violations of such prohibition; and notifying the employee that, as a condition of employment on such contract, the employee shall abide by the terms of the statement, and notify the employer of any criminal drug statute conviction for a violation occurring in the workplace no later than five (5) days after such conviction.

(b) Establishing a drug free awareness program to inform employees about the dangers of drug abuse in the workplace; the contractor's policy of maintaining a drug free workplace; any available drug counseling, rehabilitation, and employee assistance programs; and the penalties that may be imposed upon employees for drug violations.

(c) Providing a copy of the statement required by subparagraph (1) to each employee engaged in the performance of the contract and to post the statement in a prominent place in the workplace.

(d) Notifying the Department within ten (10) days after receiving notice from an employee or otherwise receiving actual notice of the conviction of an employee for a violation of any criminal drug statute occurring in the workplace.

(e) Imposing or requiring, within 30 days after receiving notice from an employee of a conviction or actual notice of such a conviction, an appropriate personnel action, up to and including termination, or the satisfactory participation in a drug abuse assistance or rehabilitation program approved by a federal, state or local health, law enforcement or other appropriate agency.

(f) Assisting employees in selecting a course of action in the event drug counseling, treatment, and rehabilitation is required and indicating that a trained referral team is in place.

(g) Making a good faith effort to continue to maintain a drug free workplace through implementation of the actions and efforts stated in this certification.

G. Debt Delinquency

1. The Illinois Procurement Code provides:

Section 50-11 and 50-12. Debt Delinquency.

The contractor or bidder certifies that it, or any affiliate, is not barred from being awarded a contract under 30 ILCS 500. Section 50-11 prohibits a person from entering into a contract with a State agency if it knows or should know that it, or any affiliate, is delinquent in the payment of any debt to the State as defined by the Debt Collection Board. Section 50-12 prohibits a person from entering into a contract with a State agency if it, or any affiliate, has failed to collect and remit Illinois Use Tax on all sales of tangible personal property into the State of Illinois in accordance with the provisions of the Illinois Use Tax Act. The contractor further acknowledges that the contracting State agency may declare the contract void if this certification is false or if the contractor, or any affiliate, is determined to be delinquent in the payment of any debt to the State during the term of the contract.

H. Sarbanes-Oxley Act of 2002

1. The Illinois Procurement Code provides:

Section 50-60(c).

The contractor certifies in accordance with 30 ILCS 500/50-10.5 that no officer, director, partner or other managerial agent of the contracting business has been convicted of a felony under the Sarbanes-Oxley Act of 2002 or a Class 3 or Class 2 felony under the Illinois Securities Law of 1953 for a period of five years prior to the date of the bid or contract. The contractor acknowledges that the contracting agency shall declare the contract void if this certification is false.

I. ADDENDA

The contractor or bidder certifies that all relevant addenda have been incorporated in to this contract. Failure to do so may cause the bid to be declared unacceptable.

J. Section 42 of the Environmental Protection Act

The contractor certifies in accordance with 30 ILCS 500/50-12 that the bidder or contractor is not barred from being awarded a contract under this Section which prohibits the bidding on or entering into contracts with the State of Illinois or a State agency by a person or business found by a court or the Pollution Control Board to have committed a willful or knowing violation of Section 42 of the Environmental Protection Act for a period of five years from the date of the order. The contractor acknowledges that the contracting agency may declare the contract void if this certification is false.

IV. DISCLOSURES

A. The disclosures hereinafter made by the bidder are each a material representation of fact upon which reliance is placed should the Department enter into the contract with the bidder. The Department may terminate the contract if it is later determined that the bidder rendered a false or erroneous disclosure, and the surety providing the performance bond shall be responsible for completion of the contract.

B. Financial Interests and Conflicts of Interest

1. Section 50-35 of the Illinois Procurement Code provides that all bids of more than $10,000 shall be accompanied by disclosure of the financial interests of the bidder. This disclosed information for the successful bidder, will be maintained as public information subject to release by request pursuant to the Freedom of Information Act.

The financial interests to be disclosed shall include ownership or distributive income share that is in excess of 5%, or an amount greater than 60% of the annual salary of the Governor, of the bidding entity or its parent entity, whichever is less, unless the contractor or bidder is a publicly traded entity subject to Federal 10K reporting, in which case it may submit its 10K disclosure in place of the prescribed disclosure. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. The disclosure shall include the names, addresses, and dollar or proportionate share of ownership of each person making the disclosure, their instrument of ownership or beneficial relationship, and notice of any potential conflict of interest resulting from the current ownership or beneficial interest of each person making the disclosure having any of the relationships identified in Section 50-35 and on the disclosure form.

In addition, all disclosures shall indicate any other current or pending contracts, proposals, leases, or other ongoing procurement relationships the bidding entity has with any other unit of state government and shall clearly identify the unit and the contract, proposal, lease, or other relationship.

2. Disclosure Forms. Disclosure Form A is attached for use concerning the individuals meeting the above ownership or distributive share requirements. Subject individuals should be covered each by one form. In addition, a second form (Disclosure Form B) provides for the disclosure of current or pending procurement relationships with other (non-IDOT) state agencies. **The forms must be included with each bid or incorporated by reference.**

C. Disclosure Form Instructions

Form A: For bidders that have previously submitted the information requested in Form A

The Department has retained the Form A disclosures submitted by all bidders responding to these requirements for the April 24, 1998 or any subsequent letting conducted by the Department. The bidder has the option of submitting the information again or the bidder may sign the following certification statement indicating that the information previously submitted by the bidder is, as of the date of signature, current and accurate. The Certification must be signed and dated by a person who is authorized to execute contracts for the bidding company. Before signing this certification, the bidder should carefully review its prior submissions to ensure the Certification is correct. If the Bidder signs the Certification, the Bidder should proceed to Form B instructions.

CERTIFICATION STATEMENT

I have determined that the Form A disclosure information previously submitted is current and accurate, and all forms are hereby incorporated by reference in this bid. Any necessary additional forms or amendments to previously submitted forms are attached to this bid.

_____
(Bidding Company)

_____ _____
Name of Authorized Representative (type or print) Title of Authorized Representative (type or print)

_____ _____
Signature of Authorized Representative Date

Form A: For bidders who have NOT previously submitted the information requested in Form A

If the bidder is a publicly traded entity subject to Federal 10K reporting, the 10K Report may be submitted to meet the requirements of Form A. If a bidder is a privately held entity that is exempt from Federal 10K reporting, but has more than 400 shareholders, it may submit the information that Federal 10K companies are required to report, and list the names of any person or entity holding any ownership share that is in excess of 5%. If a bidder is not subject to Federal 10K reporting, the bidder must determine if any individuals are required by law to complete a financial disclosure form. To do this, the bidder should answer each of the following questions. A "YES" answer indicates Form A must be completed. If the answer to each of the following questions is "NO", then the NOT APPLICABLE STATEMENT on the second page of Form A must be signed and dated by a person that is authorized to execute contracts for the bidding company. Note: These questions are for assistance only and are not required to be completed.

1. Does anyone in your organization have a direct or beneficial ownership share of greater than 5% of the bidding entity or parent entity? YES ___ NO___
2. Does anyone in your organization have a direct or beneficial ownership share of less than 5%, but which has a value greater than $90,420.00? YES ___ NO___
3. Does anyone in your organization receive more than $90,420.00 of the bidding entity's or parent entity's distributive income? (Note: Distributive income is, for these purposes, any type of distribution of profits. An annual salary is not distributive income.) YES ___ NO __
4. Does anyone in your organization receive greater than 5% of the bidding entity's or parent entity's total distributive income, but which is less than $90,420.00? YES ___ NO __

   (Note: Only one set of forms needs to be completed per person per bid even if a specific individual would require a yes answer to more than one question.)

A "YES" answer to any of these questions requires the completion of Form A. The bidder must determine each individual in the bidding entity or the bidding entity's parent company that would cause the questions to be answered "Yes". Each form must be signed and dated by a person that is authorized to execute contracts for your organization. **Photocopied or stamped signatures are not acceptable.** The person signing can be, but does not have to be, the person for which the form is being completed. The bidder is responsible for the accuracy of any information provided.

If the answer to each of the above questions is "NO", then the NOT APPLICABLE STATEMENT on page 2 of Form A must be signed and dated by a person that is authorized to execute contracts for your company.

Form B: Identifying Other Contracts & Procurement Related Information Disclosure Form B must be completed for each bid submitted by the bidding entity. It must be signed by an individual who is authorized to execute contracts for the bidding entity. *Note: Signing the NOT APPLICABLE STATEMENT on Form A does not allow the bidder to ignore Form B. Form B must be completed, signed and dated or the bidder may be considered nonresponsive and the bid will not be accepted.*

The Bidder shall identify, by checking Yes or No on Form B, whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other (non-IDOT) State of Illinois agency. If "No" is checked, the bidder only needs to complete the signature box on the bottom of Form B. If "Yes" is checked, the bidder must do one of the following:

Option I: If the bidder did not submit an Affidavit of Availability to obtain authorization to bid, the bidder must list all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. These items may be listed on Form B or on an attached sheet(s). Do not include IDOT contracts. Contracts with cities, counties, villages, etc. are not considered State of Illinois agency contracts and are not to be included. Contracts with other State of Illinois agencies such as the Department of Natural Resources or the Capital Development Board must be included. Bidders who submit Affidavits of Availability are suggested to use Option II.

Option II: If the bidder is required and has submitted an Affidavit of Availability in order to obtain authorization to bid, the bidder may write or type "See Affidavit of Availability" which indicates that the Affidavit of Availability is incorporated by reference and includes all non-IDOT State of Illinois agency pending contracts, leases, bids, proposals, and other ongoing procurement relationships. For any contracts that are not covered by the Affidavit of Availability, the bidder must identify them on Form B or on an attached sheet(s). These might be such things as leases.

D. Bidders Submitting More Than One Bid

Bidders submitting multiple bids may submit one set of forms consisting of all required Form A disclosures and one Form B for use with all bids. Please indicate in the space provided below the bid item that contains the original disclosure forms and the bid items which incorporate the forms by reference.

- The bid submitted for letting item _____ contains the Form A disclosures or Certification Statement and the Form B disclosures. The following letting items incorporate the said forms by reference:

_____

_____

RETURN WITH BID/OFFER

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form A
Financial Information & Potential Conflicts of Interest Disclosure

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Code (30 ILCS 500). Vendors desiring to enter into a contract with the State of Illinois must disclose the financial information and potential conflict of interest information as specified in this Disclosure Form. This information shall become part of the publicly available contract file. This Form A must be completed for bids in excess of $10,000, and for all open-ended contracts. **A publicly traded company may submit a 10K disclosure (or equivalent if applicable) in satisfaction of the requirements set forth in Form A.** **See Disclosure Form Instructions.**

DISCLOSURE OF FINANCIAL INFORMATION

1. Disclosure of Financial Information. The individual named below has an interest in the BIDDER (or its parent) in terms of ownership or distributive income share in excess of 5%, or an interest which has a value of more than $90,420.00 (60% of the Governor's salary as of 7/1/01). **(Make copies of this form as necessary and attach a separate Disclosure Form A for each individual meeting these requirements)**

FOR INDIVIDUAL (type or print information)

NAME: _____

ADDRESS _____

_____

Type of ownership/distributable income share:

stock _____ sole proprietorship _____ Partnership _____ other: (explain on separate sheet):

% or $ value of ownership/distributable income share: _____

2. Disclosure of Potential Conflicts of Interest. Check "Yes" or "No" to indicate which, if any, of the following potential conflict of interest relationships apply. If the answer to any question is "Yes", please attach additional pages and describe.

(a) State employment, currently or in the previous 3 years, including contractual employment of services. Yes ___No __

If your answer is yes, please answer each of the following questions.

1. Are you currently an officer or employee of either the Capitol Development Board or the Illinois Toll Highway Authority? Yes ___No __

2. Are you currently appointed to or employed by any agency of the State of Illinois? If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name the State agency for which you are employed and your annual salary. _____

_____

3. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) are you entitled to receive (i) more than 7 1/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ___ No __

4. If you are currently appointed to or employed by any agency of the State of Illinois, and your annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or minor children entitled to receive (i) more than 15% in aggregate of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor? Yes ___ No __

(b) State employment of spouse, father, mother, son, or daughter, including contractual employment for services in the previous 2 years.

Yes ___No __

If your answer is yes, please answer each of the following questions.

1. Is your spouse or any minor children currently an officer or employee of the Capitol Development Board or the Illinois Toll Highway Authority? Yes ___No __

2. Is your spouse or any minor children currently appointed to or employed by any agency of the State of Illinois? If your spouse or minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) provide the name of the spouse and/or minor children, the name of the State agency for which he/she is employed and his/her annual salary. _____

_____

3. If your spouse or any minor children is/are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $90,420.00, (60% of the salary of the Governor as of 7/1/01) are you entitled to receive (i) more than 71/2% of the total distributable income of your firm, partnership, association or corporation, or (ii) an amount in excess of the salary of the Governor? Yes ___ No __

4. If your spouse or any minor children are currently appointed to or employed by any agency of the State of Illinois, and his/her annual salary exceeds $90,420.00, (60% of the Governor's salary as of 7/1/01) are you and your spouse or any minor children entitled to receive (i) more than 15% in the aggregate of the total distributable income from your firm, partnership, association or corporation, or (ii) an amount in excess of 2 times the salary of the Governor?

Yes ___ No __

(c) Elective status; the holding of elective office of the State of Illinois, the government of the United States, any unit of local government authorized by the Constitution of the State of Illinois or the statutes of the State of Illinois currently or in the previous 3 years. Yes ___No __

(d) Relationship to anyone holding elective office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(e) Appointive office; the holding of any appointive government office of the State of Illinois, the United State of America, or any unit of local government authorized by the Constitution of the State of Illinois or the statues of the State of Illinois, which office entitles the holder to compensation in excess of the expenses incurred in the discharge of that office currently or in the previous 3 years. Yes ___No __

(f) Relationship to anyone holding appointive office currently or in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(g) Employment, currently or in the previous 3 years, as or by any registered lobbyist of the State government. Yes ___No __

(h) Relationship to anyone who is or was a registered lobbyist in the previous 2 years; spouse, father, mother, son, or daughter. Yes ___No __

(i) Compensated employment, currently or in the previous 3 years, by any registered election or reelection committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No __

(j) Relationship to anyone; spouse, father, mother, son, or daughter; who was a compensated employee in the last 2 years by any registered election or re-election committee registered with the Secretary of State or any county clerk of the State of Illinois, or any political action committee registered with either the Secretary of State or the Federal Board of Elections. Yes ___ No __

APPLICABLE STATEMENT

This Disclosure Form A is submitted on behalf of the INDIVIDUAL named on previous page.

Completed by: _____
Name of Authorized Representative (type or print)

Completed by: _____
Title of Authorized Representative (type or print)

Completed by: _____ _____
Signature of Individual or Authorized Representative Date

NOT APPLICABLE STATEMENT

I have determined that no individuals associated with this organization meet the criteria that would require the completion of this Form A.

This Disclosure Form A is submitted on behalf of the CONTRACTOR listed on the previous page.

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____ _____
Signature of Authorized Representative Date

RETURN WITH BID/OFFER

ILLINOIS DEPARTMENT OF TRANSPORTATION

Form B
Other Contracts & Procurement Related Information Disclosure

Contractor Name		
Legal Address		
City, State, Zip		
Telephone Number	Email Address	Fax Number (if available)

Disclosure of the information contained in this Form is required by the Section 50-35 of the Illinois Procurement Act (30 ILCS 500). This information shall become part of the publicly available contract file. This Form B must be completed for bids in excess of $10,000, and for all open-ended contracts.

DISCLOSURE OF OTHER CONTRACTS AND PROCUREMENT RELATED INFORMATION

1. Identifying Other Contracts & Procurement Related Information. The BIDDER shall identify whether it has any pending contracts (including leases), bids, proposals, or other ongoing procurement relationship with any other State of Illinois agency: Yes ___ No __
If "No" is checked, the bidder only needs to complete the signature box on the bottom of this page.

2. If "Yes" is checked. Identify each such relationship by showing State of Illinois agency name and other descriptive information such as bid or project number (attach additional pages as necessary). SEE DISCLOSURE FORM INSTRUCTIONS:

THE FOLLOWING STATEMENT MUST BE SIGNED

_____
Name of Authorized Representative (type or print)

_____
Title of Authorized Representative (type or print)

_____ _____
Signature of Authorized Representative Date

SPECIAL NOTICE TO CONTRACTORS

The following requirements of the Illinois Department of Human Rights' Rules and Regulations are applicable to bidders on all construction contracts advertised by the Illinois Department of Transportation:

CONSTRUCTION EMPLOYEE UTILIZATION PROJECTION

(a) All bidders on construction contracts shall complete and submit, along with and as part of their bids, a Bidder's Employee Utilization Form (Form BC-1256) setting forth a projection and breakdown of the total workforce intended to be hired and/or allocated to such contract work by the bidder including a projection of minority and female employee utilization in all job classifications on the contract project.

(b) The Department of Transportation shall review the Employee Utilization Form, and workforce projections contained therein, of the contract awardee to determine if such projections reflect an underutilization of minority persons and/or women in any job classification in accordance with the Equal Employment Opportunity Clause and Section 7.2 of the Illinois Department of Human Rights' Rules and Regulations for Public Contracts adopted as amended on September 17, 1980. If it is determined that the contract awardee's projections reflect an underutilization of minority persons and/or women in any job classification, it shall be advised in writing of the manner in which it is underutilizing and such awardee shall be considered to be in breach of the contract unless, prior to commencement of work on the contract project, it submits revised satisfactory projections or an acceptable written affirmative action plan to correct such underutilization including a specific timetable geared to the completion stages of the contract.

(c) The Department of Transportation shall provide to the Department of Human Rights a copy of the contract awardee's Employee Utilization Form, a copy of any required written affirmative action plan, and any written correspondence related thereto. The Department of Human Rights may review and revise any action taken by the Department of Transportation with respect to these requirements.

RETURN WITH BID

Illinois Department of Transportation

Contract No. 93346
SANGAMON County
Section 98-00009-00-BR (Sherman)
Project HSR-D6(74)
Route MEREDITH DRIVE
District 6 Construction Funds

PART I. IDENTIFICATION

Dept. Human Rights # _____ Duration of Project: _____

Name of Bidder: _____

PART II. WORKFORCE PROJECTION

A. The undersigned bidder has analyzed minority group and female populations, unemployment rates and availability of workers for the location in which this contract work is to be performed, and for the locations from which the bidder recruits employees, and hereby submits the following workforce projection including a projection for minority and female employee utilization in all job categories in the workforce to be allocated to this contract:

TABLE A

TOTAL Workforce Projection for Contract

JOB CATEGORIES	TOTAL EMPLOYEES		MINORITY EMPLOYEES						TRAINEES			
			BLACK		HISPANIC		*OTHER MINOR.		APPREN-TICES		ON THE JOB TRAINEES	
	M	F	M	F	M	F	M	F	M	F	M	F
OFFICIALS (MANAGERS)												
SUPERVISORS												
FOREMEN												
CLERICAL												
EQUIPMENT OPERATORS												
MECHANICS												
TRUCK DRIVERS												
IRONWORKERS												
CARPENTERS												
CEMENT MASONS												
ELECTRICIANS												
PIPEFITTERS, PLUMBERS												
PAINTERS												
LABORERS, SEMI-SKILLED												
LABORERS, UNSKILLED												
TOTAL												

TABLE B

CURRENT EMPLOYEES TO BE ASSIGNED TO CONTRACT			
TOTAL EMPLOYEES		MINORITY EMPLOYEES	
M	F	M	F

TABLE C

TOTAL Training Projection for Contract

EMPLOYEES IN TRAINING	TOTAL EMPLOYEES		BLACK		HISPANIC		*OTHER MINOR.	
	M	F	M	F	M	F	M	F
APPRENTICES								
ON THE JOB TRAINEES								

*Other minorities are defined as Asians (A) or Native Americans (N).
Please specify race of each employee shown in Other Minorities column.

FOR DEPARTMENT USE ONLY

Note: See instructions on the next page

RETURN WITH BID

Contract No. 93346
SANGAMON County
Section 98-00009-00-BR (Sherman)
Project HSR-D6(74)
Route MEREDITH DRIVE
District 6 Construction Funds

PART II. WORKFORCE PROJECTION - continued

B. Included in "Total Employees" under Table A is the total number of **new hires** that would be employed in the event the undersigned bidder is awarded this contract.

The undersigned bidder projects that: (number) _____ new hires would be recruited from the area in which the contract project is located; and/or (number) _____ new hires would be recruited from the area in which the bidder's principal office or base of operation is located.

C. Included in "Total Employees" under Table A is a projection of numbers of persons to be employed directly by the undersigned bidder as well as a projection of numbers of persons to be employed by subcontractors.

The undersigned bidder estimates that (number) _____ persons will be directly employed by the prime contractor and that (number) _____ persons will be employed by subcontractors.

PART III. AFFIRMATIVE ACTION PLAN

A. The undersigned bidder understands and agrees that in the event the foregoing minority and female employee utilization projection included under **PART II** is determined to be an underutilization of minority persons or women in any job category, and in the event that the undersigned bidder is awarded this contract, he/she will, prior to commencement of work, develop and submit a written Affirmative Action Plan including a specific timetable (geared to the completion stages of the contract) whereby deficiencies in minority and/or female employee utilization are corrected. Such Affirmative Action Plan will be subject to approval by the contracting agency and the **Department of Human Rights**.

B. The undersigned bidder understands and agrees that the minority and female employee utilization projection submitted herein, and the goals and timetable included under an Affirmative Action Plan if required, are deemed to be part of the contract specifications.

Company _____ Telephone Number _____

_____

Address _____

NOTICE REGARDING SIGNATURE

The Bidder's signature on the Proposal Signature Sheet will constitute the signing of this form. The following signature block needs to be completed only if revisions are required.

Signature: _____ Title: _____ Date: _____

Instructions: All tables must include subcontractor personnel in addition to prime contractor personnel.

Table A - Include both the number of employees that would be hired to perform the contract work and the total number currently employed (Table B) that will be allocated to contract work, and include all apprentices and on-the-job trainees. The "Total Employees" column should include all employees including all minorities, apprentices and on-the-job trainees to be employed on the contract work.

Table B - Include all employees currently employed that will be allocated to the contract work including any apprentices and on-the-job trainees currently employed.

Table C - Indicate the racial breakdown of the total apprentices and on-the-job trainees shown in Table A.

ADDITIONAL FEDERAL REQUIREMENTS

In addition to the Required Contract Provisions for Federal-Aid Construction Contracts (FHWA 1273), all bidders make the following certifications.

A. By the execution of this proposal, the signing bidder certifies that the bidding entity has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid. This statement made by the undersigned bidder is true and correct under penalty of perjury under the laws of the United States.

B. CERTIFICATION, EQUAL EMPLOYMENT OPPORTUNITY:

1. Have you participated in any previous contracts or subcontracts subject to the equal opportunity clause. YES _____ NO _____

2. If answer to #1 is yes, have you filed with the Joint Reporting Committee, the Director of OFCC, any Federal agency, or the former President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements of those organizations? YES _____ NO _____

RETURN WITH BID

Contract No. 93346
SANGAMON County
Section 98-00009-00-BR (Sherman)
Project HSR-D6(74)
Route MEREDITH DRIVE
District 6 Construction Funds

PROPOSAL SIGNATURE SHEET

The undersigned bidder hereby makes and submits this bid on the subject Proposal, thereby assuring the Department that all requirements of the Invitation for Bids and rules of the Department have been met, that there is no misunderstanding of the requirements of paragraph 3 of this Proposal, and that the contract will be executed in accordance with the rules of the Department if an award is made on this bid.

(IF AN INDIVIDUAL)

Firm Name _____

Signature of Owner _____

Business Address _____

_____

(IF A CO-PARTNERSHIP)

Firm Name _____

By _____

Business Address _____

_____

Name and Address of All Members of the Firm:

_____ _____

_____ _____

(IF A CORPORATION)

Corporate Name _____

By _____
Signature of Authorized Representative

_____
Typed or printed name and title of Authorized Representative

Attest _____
Signature

(IF A JOINT VENTURE, USE THIS SECTION FOR THE MANAGING PARTY AND THE SECOND PARTY SHOULD SIGN BELOW)

Business Address _____

_____

(IF A JOINT VENTURE)

Corporate Name _____

By _____
Signature of Authorized Representative

_____
Typed or printed name and title of Authorized Representative

Attest _____
Signature

Business Address _____

_____

If more than two parties are in the joint venture, please attach an additional signature sheet.

RETURN WITH BID

Illinois Department of Transportation

Division of Highways
Proposal Bid Bond
(Effective November 1, 1992)

Item No. _____
Letting Date _____

KNOW ALL MEN BY THESE PRESENTS, That We _____

_____

as PRINCIPAL, and _____

_____ as SURETY, are held jointly, severally and firmly bound unto the STATE OF ILLINOIS in the penal sum of 5 percent of the total bid price, or for the amount specified in Article 102.09 of the "Standard Specifications for Road and Bridge Construction" in effect on the date of invitation for bids, whichever is the lesser sum, well and truly to be paid unto said STATE OF ILLINOIS, for the payment of which we bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE FOREGOING OBLIGATION IS SUCH, That Whereas, the PRINCIPAL has submitted a bid proposal to the STATE OF ILLINOIS, acting through the Department of Transportation, for the improvement designated by the Transportation Bulletin Item Number and Letting Date indicated above.

NOW, THEREFORE, if the Department shall accept the bid proposal of the PRINCIPAL; and if the PRINCIPAL shall, within the time and as specified in the bidding and contract documents, submit a DBE Utilization Plan that is accepted and approved by the Department; and if, after award by the Department, the PRINCIPAL shall enter into a contract in accordance with the terms of the bidding and contract documents including evidence of the required insurance coverages and providing such bond as specified with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof; or if, in the event of the failure of the PRINCIPAL to make the required DBE submission or to enter into such contract and to give the specified bond, the PRINCIPAL pays to the Department the difference not to exceed the penalty hereof between the amount specified in the bid proposal and such larger amount for which the Department may contract with another party to perform the work covered by said bid proposal, then this obligation shall be null and void, otherwise, it shall remain in full force and effect.

IN THE EVENT the Department determines the PRINCIPAL has failed to comply with any requirement as set forth in the preceding paragraph, then Surety shall pay the penal sum to the Department within fifteen (15) days of written demand therefor. If Surety does not make full payment within such period of time, the Department may bring an action to collect the amount owed. Surety is liable to the Department for all its expenses, including attorney's fees, incurred in any litigation in which it prevails either in whole or in part.

In TESTIMONY WHEREOF, the said PRINCIPAL and the said SURETY have caused this instrument to be signed by their respective officers this _____ day of _____ A.D., _____.

PRINCIPAL

_____
(Company Name)

By: _____
(Signature & Title)

SURETY

_____
(Company Name)

By: _____
(Signature of Attorney-in-Fact)

Notary Certification for Principal and Surety

STATE OF ILLINOIS,
COUNTY OF _____

I, _____, a Notary Public in and for said County, do hereby certify that

_____ and _____

(Insert names of individuals signing on behalf of PRINCIPAL & SURETY)

who are each personally known to me to be the same persons whose names are subscribed to the foregoing instrument on behalf of PRINCIPAL and SURETY, appeared before me this day in person and acknowledged respectively, that they signed and delivered said instrument as their free and voluntary act for the uses and purposes therein set forth.

Given under my hand and notarial seal this _____ day of _____, A.D. _____.

My commission expires _____ _____
Notary Public

In lieu of completing the above section of the Proposal Bid Form, the Principal may file an Electronic Bid Bond. By signing below the Principal is ensuring the identified electronic bid bond has been executed and the Principal and Surety are firmly bound unto the State of Illinois under the conditions of the bid bond as shown above.

_____ _____ _____
Electronic Bid Bond ID# Company/Bidder Name Signature and Title

BD 356 (Rev. 2000)

PROPOSAL ENVELOPE

Illinois Department of Transportation

PROPOSALS

for construction work advertised for bids by the
Illinois Department of Transportation

Item No.	Item No.	Item No.

Submitted By:

Name:
Address:
Phone No.

Bidders should use an IDOT proposal envelope or affix this form to the front of a 10" x 13" envelope for the submittal of bids. If proposals are mailed, they should be enclosed in a second or outer envelope addressed to:

Engineer of Design and Environment - Room 323
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

NOTICE

Individual bids, including Bid Bond and/or supplemental information if required, should be securely stapled.

CONTRACTOR OFFICE COPY OF CONTRACT SPECIFICATIONS

NOTICE

None of the following material needs to be returned with the bid package unless the special provisions require documentation and/or other information to be submitted.

Contract No. 93346
SANGAMON County
Section 98-00009-00-BR (Sherman)
Project HSR-D6(74)
Route MEREDITH DRIVE
District 6 Construction Funds

Illinois Department of Transportation

Illinois Department of Transportation

NOTICE TO BIDDERS

1. **TIME AND PLACE OF OPENING BIDS.** Sealed proposals for the improvement described herein will be received by the Department of Transportation at the Harry R. Hanley Building, 2300 South Dirksen Parkway, in Springfield, Illinois until 10:00 o'clock a.m., March 5, 2004. All bids will be gathered, sorted, publicly opened and read in the auditorium at the Department of Transportation's Harry R. Hanley Building shortly after the 10:00 a.m. cut off time.

2. **DESCRIPTION OF WORK.** The proposed improvement is identified and advertised for bids in the Invitation for Bids as:

Contract No. 93346
SANGAMON County
Section 98-00009-00-BR (Sherman)
Project HSR-D6(74)
Route MEREDITH DRIVE
District 6 Construction Funds

0.45 mile road construction on Meredith Drive extending Old Tipton School Road from Business Loop I-55 to First Street and construction of a grade separation carrying the Union Pacific railroad over Meredith Drive, 0.205 mile construction on BUSINESS LOOP I-55 and 0.416 mile construction of Shoofly Track all in Sherman.

3. **INSTRUCTIONS TO BIDDERS.** (a) This Notice, the invitation for bids, proposal and letter of award shall, together with all other documents in accordance with Article 101.09 of the Standard Specifications for Road and Bridge Construction, become part of the contract. Bidders are cautioned to read and examine carefully all documents, to make all required inspections, and to inquire or seek explanation of the same prior to submission of a bid.

   (b) State law, and, if the work is to be paid wholly or in part with Federal-aid funds, Federal law requires the bidder to make various certifications as a part of the proposal and contract. By execution and submission of the proposal, the bidder makes the certification contained therein. A false or fraudulent certification shall, in addition to all other remedies provided by law, be a breach of contract and may result in termination of the contract.

4. **AWARD CRITERIA AND REJECTION OF BIDS.** This contract will be awarded to the lowest responsive and responsible bidder considering conformity with the terms and conditions established by the Department in the rules, Invitation for Bids and contract documents. The issuance of plans and proposal forms for bidding based upon a prequalification rating shall not be the sole determinant of responsibility. The Department reserves the right to determine responsibility at the time of award, to reject any or all proposals, to readvertise the proposed improvement, and to waive technicalities.

By Order of the
Illinois Department of Transportation

Timothy W. Martin, Secretary

BD 351 (Rev. 01/2003)

CHECKSHEET
FOR
SUPPLEMENTAL SPECIFICATIONS
AND RECURRING SPECIAL PROVISIONS

Adopted January 1, 2004

This sheet contains a listing of the ERRATA, and SUPPLEMENTAL SPECIFICATIONS, frequently used RECURRING SPECIAL PROVISIONS and RECURRING LOCAL ROADS AND STREETS SPECIAL PROVISIONS.

SUPPLEMENTAL SPECIFICATIONS

The following RECURRING SPECIAL PROVISIONS and RECURRING LOCAL ROADS AND STREETS SPECIAL PROVISIONS indicated by an "X" are applicable to this contract and are included by reference:

RECURRING SPECIAL PROVISIONS

RECURRING LOCAL ROADS AND STREETS SPECIAL PROVISIONS

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

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DEPARTMENT OF TRANSPORTATION

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INDEX INTERIM SPECIAL PROVISIONS (CONT'D)

INDEX INTERIM SPECIAL PROVISIONS (CONT'D)

GUIDE BRIDGE SPECIAL PROVISION INDEX/CHECK SHEET

Effective: June 30, 2003

File Name	X	Title	Effective	Revised	Page No.
GBSP1		Formed Concrete Repair	10/10/95	8/21/02	
GBSP2	X	Drilled Shafts	5/1/01	1/1/02	146-155
GBSP3		High Performance Shotcrete	6/7/94	1/1/02	
GBSP4		Polymer Modified Portland Cement Mortar	6/7/94	1/1/02	
GBSP5-9		Reserved			
GBSP10		Reserved			
GBSP11		Permanent Steel Sheet Piling	12/15/93	10/1/02	
GBSP12		Drainage System	6/10/94	1/1/02	
GBSP13		Floating Bearing	10/13/88	6/23/03	
GBSP14		Jack and Remove Existing Bearings	4/20/94	6/24/02	
GBSP15		Three Sided Precast Concrete Structure	7/12/94	3/31/03	
GBSP16		Jacking Existing Superstructure	1/11/93	1/3/03	
GBSP17		Bonded Preformed Joint Seal	7/12/94	1/1/02	
GBSP18		Modular Expansion Joint	5/19/94	6/23/03	
GBSP19		Fabric Reinforced Elastomeric Trough	6/6/94	9/12/03	
GBSP20		Reserved			
GBSP21		Cleaning and Painting Contract Surface Areas of Existing Steel Structures	6/30/03		
GBSP22	X	Cleaning and Painting New Metal Structures	9/13/94	4/2/03	156-160
GBSP23		Reserved			
GBSP24		Reserved			
GBSP25		Cleaning and Painting Existing Metal Structures	10/2/01	4/7/03	
GBSP26		Containment and Disposal of Lead Paint Cleaning Residues	10/2/01	4/7/03	
GBSP28		Deck Slab Repair	5/15/95	3/12/03	
GBSP29		Bridge Deck Microsilica Concrete Overlay	5/15/95	6/23/03	
GBSP30		Bridge Deck Latex Concrete Overlay	5/15/95	6/23/03	
GBSP31		Bridge Deck High-Reactivity Metakaolin (HRM) Concrete Overlay	1/21/00	6/23/03	
GBSP32	X	Temporary Sheet Piling	9/2/94	12/13/02	161-162
GBSP33		Pedestrian Truss Superstructure	1/13/98	9/15/03	
GBSP34		Concrete Wearing Surface	6/23/94	1/1/02	
GBSP35		Silicone Bridge Joint Sealer	8/1/95	12/16/02	
GBSP36		Surface Preparation and Painting Req. for Weathering Steel	11/21/97	1/9/02	
GBSP37		Underwater Structure Excavation Protection.	4/1/95	8/21/02	
GBSP38		Mechanically Stabilized Earth Retaining Walls.	2/3/99	10/6/03	
GBSP39		Precast, Prestressed Concrete Deck Beams Stage Constr.	9/1/94	1/1/02	
GBSP40		Fabric Reinforced Elastomeric Mat	7/14/00	9/12/03	
GBSP41		Bridge Joint Sealing System	5/1/01	1/1/02	
GBSP42		Drilled Soldier Pile Retaining Wall	9/20/01	4/25/03	
GBSP43		Driven Soldier Pile Retaining Wall	11/13/02	4/25/03	
GBSP44		Temporary Soil Retention System	12/30/02		

GBSP 45		Bridge Deck Thin Polymer Overlay	May 7, 1997	3/5/03	
GBSP 46		Geotextile Retaining walls	Sept 19, 2003		
GBSP 47		High Performance Concrete Structures	Aug. 5, 2002	9/10/03	
GBSP 48	X	Precast Concrete Structures	Sept 12, 2003		163-164

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISIONS

The following special provisions supplement the "Standard Specifications for Road and Bridge Construction" adopted January 1, 2002, the latest edition of the "Manual on Uniform Traffic Control Devices for Streets and Highways", the "Standard Specifications for Water and Sewer Main Construction in Illinois" May 1996 Fifth Edition, the "Manual of Test Procedures for Materials" in effect on the date of invitation for bids, the Union Pacific Railroad "Guidelines for Design and Construction of Grade Separation Underpass Structures" adopted March 31, 1998, the Union Pacific Railroad "Guidelines for Design and Construction of Shoofly (Detour) Tracks", and the Supplemental Specifications and Recurring Special Provisions indicated on the check sheet, included herein, which apply to and govern the construction of F.A.S. Route 618 (Meredith Drive) under U.P. Railroad and Intersection with F.A.P. Route 666 (B.L. I-55) in the Village of Sherman, Sangamon County, Section 98-00009-00-BR, Project No. HSR-00D6(74) and in case of conflict with any part or parts of said Specifications, the said Special Provisions shall take precedence and shall govern.

DESCRIPTION OF WORK

Roadway work will include the construction of a full depth bituminous pavement on a lime modified soil base, concrete barrier curb, and a closed drainage system on a new alignment (Meredith Drive) between Business Loop I-55 and First Street / Saratoga Chase. Additional Roadway work will consist of widening and resurfacing of the intersection at Business Loop I-55 to accommodate a raised median, left turn lanes, right turn lanes, and traffic signals. Roadway work will be completed with necessary striping and seeding throughout.

Railroad work will include the construction of a temporary shoofly alignment to carry train traffic during the construction of a permanent Union Pacific Railroad structure over the proposed Meredith Drive roadway alignment as described above. The railroad structure will be a single span measuring 152'-6" from back to back of vaulted abutments. The superstructure will consist of a concrete deck on steel plate girders measuring 19'-0" out to out. Drilled shafts will support the substructure. Most of the shoofly will be removed once no longer needed.

The project measures approximately 2,372 feet or 0.449 mile along the new alignment (Meredith Drive); 1,080 feet or 0.205 mile along Business Loop I-55; and 2,198 feet or 0.416 mile along the temporary shoofly track.

SEQUENCE OF CONSTRUCTION

STAGE I – GRADE MEREDITH DRIVE EAST OF UPRR

1) CLEAR AND STRIP TOPSOIL FROM MEREDITH DRIVE CONSTRUCTION LIMITS EAST OF THE MAINLINE UPRR EMBANKMENT TO FUTURE FIRST STREET.

2) INSTALL EROSION CONTROL ALONG MEREDITH DRIVE EAST OF THE MAINLINE UPRR EMBANKMENT.

3) GRADE MEREDITH DRIVE EAST OF THE MAINLINE UPRR EMBANKMENT.

4) CONSTRUCT STORM SEWER AND CROSS ROAD CULVERTS ON MEREDITH DRIVE EAST OF THE MAINLINE UPRR EMBANKMENT.

5) CREATE A CONSTRUCTION HAUL ROAD ON THE MEREDITH DRIVE ALIGNMENT FROM FIRST STREET TO SHOOFLY SITE.

STAGE II – CONSTRUCT TEMPORARY SHOOFLY

1) INSTALL 18" PIPE CULVERT UNDER SHOOFLY AT STA. 208+00 & INSTALL TEMPORARY 12" PIPE CULVERT @ 210+50 (CL SHOOFLY)

2) EXTEND EXISTING 5'H X 6'W CONCRETE BOX CULVERT AT STA 205+09 (CL SHOOFLY)

3) CLEAR AND STRIP TOPSOIL FROM SHOOFLY CONSTRUCTION LIMITS.

4) INSTALL EROSION CONTROL ALONG SHOOFLY CONSTRUCTION LIMITS.

5) CONSTRUCT SHOOFLY EMBANKMENT AND DRAINAGE DITCHES.

6) APPLY SEEDING TO SHOOFLY EMBANKMENT.

7) CONSTRUCT RAILROAD ROADBED, BALLAST, AND TRACK ON THE SHOOFLY.

8) TIE SHOOFLY INTO MAINLINE UPRR AND SWITCH UPRR TRAFFIC TO SHOOFLY.

STAGE III – GRADE MEREDITH DRIVE WEST OF UPRR

1) CLEAR AND STRIP TOPSOIL FROM MEREDITH DRIVE CONSTRUCTION LIMITS WEST OF THE MAINLINE UPRR EMBANKMENT.

2) INSTALL EROSION CONTROL ALONG MEREDITH DRIVE WEST OF THE MAINLINE UPRR EMBANKMENT.

3) GRADE MEREDITH DRIVE WEST OF THE MAINLINE UPRR EMBANKMENT.

4) CONSTRUCT STORM SEWER AND CROSS ROAD CULVERTS ON MEREDITH DRIVE WEST OF THE MAINLINE UPRR EMBANKMENT.

5) CREATE A CONSTRUCTION HAUL ROAD ON THE MEREDITH DRIVE ALIGNMENT WEST OF THE MAINLINE UPRR EMBANKMENT.

STAGE IV – CONSTRUCT BRIDGE

1) REMOVE TRACK AND RAILROAD ROADBED FROM STA. 117+50 TO STA. 120+50 (MAINLINE UPRR).

2) EXCAVATE MAINLINE UPRR EMBANKMENT FOR BRIDGE CONSTRUCTION.

3) INSTALL TEMPORARY SHEET PILING AT SOUTH ABUTMENT AND INSTALL DRILLED SHAFT FOUNDATIONS FOR ALL SUBSTRUCTURES.

4) CONSTRUCT VAULTED ABUTMENTS.

5) ERECT BEAMS, FORM AND POUR CONCRETE DECK, CONSTRUCT RAILINGS, AND INSTALL DECK WATERPROOFING.

6) INSTALL BALLAST AND NEW TRACK FROM MAINLINE UPRR STA. 117+50 TO STA. 120+50. SWITCH TRAFFIC FROM SHOOFLY TO MAINLINE UPRR.

STAGE V – FINAL GRADING OF MEREDITH DRIVE, REMOVE SHOOFLY, PAVE

1) REMOVE PORTIONS OF THE SHOOFLY EMBANKMENT AS SHOWN IN THE PLANS.

2) PERFORM FINAL GRADING ON MEREDITH DRIVE.

3) CONSTRUCT MEREDITH DRIVE PAVEMENT AND CURB AND GUTTER.

4) CONSTRUCT INTERSECTION AT BUSINESS LOOP 55 AND INSTALL TRAFFIC SIGNALS.

5) APPLY FINAL SEEDING TO MEREDITH DRIVE AND UPRR EMBANKMENT.

6) MAINTAIN EROSION CONTROL MEASURES UNTIL SEEDING IS ESTABLISHED.

TRAFFIC CONTROL PLAN

Traffic control shall be in accordance with the applicable sections of the Standard Specifications for Road and Bridge Construction, the applicable guidelines contained in the Illinois Manual on Uniform Traffic Control Devices for Streets and Highways, these Special Provisions, any special details and Highway Standards contained herein and in the plans.

Special attention is called to Sections 107 and 701 through 703 of the standard Specifications for Road and Bridge Construction, and as amended by the Supplemental Specifications, Recurring Special Provisions, the Special Provisions contained herein, and the following highway standards relating to traffic control:

701001	**701006**	**701101**	**701106**	**701201**	**701401**
701406	**701701**	**702001**			

Revise the first paragraph of Article 702.05(a) to read: "General: Sign posts shall be (4 x 4 inches) wood posts according to Article 1093.01(b). All posts shall be braced to the satisfaction of the Engineer. The use of metal posts will not be permitted."

Limitations of Construction when working on Business Loop I-55 Improvements:
The Contractor shall coordinate the items of work in order to keep hazards and traffic inconveniences to a minimum, as specified below.

1) The Contractor shall provide, erect, and maintain all the necessary barricades, cones, drums, and lights for the warning and protection of traffic as required by Sections 107 and 701 through 703 of the Standard Specifications and as modified. Sufficient barricades shall be at Meredith Drive excavation along BL I-55 to prevent public access.

2) The Contractor shall furnish and erect "Road Construction Ahead" signs (W20-1(0)-48) at both ends of the project on F.A.P. 666 (B.L. I-55) and on Old Tipton School Road when working at this intersection.

3) When possible, lane closures shall be scheduled to avoid peak hour traffic. Reducing to one lane of traffic with flaggers shall be avoided between the hours of 6:00 a.m. to 9:00 a.m. and between the hours of 3:30 p.m. to 6:30 p.m. Monday through Friday.

4) F.A.P. 666 (B.L. I-55) and Old Tipton School Road shall remain open to traffic at all times during the construction at this intersection. Additionally, access to entrances shall be maintained at all times.

5) The following traffic control standards shall apply during work on Business Loop I-55:
   a) 701101 - GUARDRAIL AND SHOULDER WORK
   b) 701106 - LANDSCAPING AND UTILITY WORK
   c) 701401 - STORM SEWER AND OTHER WORK
   d) 701406-02 - PAVING AND PATCHING WORK
   e) 701701-03 - TRAFFIC SIGNAL WORK AND MEDIAN WORK

Limitations of Construction when performing Shoofly construction, UPRR Structure construction, and track work: The Contractor shall coordinate the items of work in order to keep hazards and comply with Union Pacific Railroad requirements, as specified below.

1) THE AVERAGE DAILY UPRR TRAFFIC IN THIS AREA IS:
   a) TEN FREIGHT TRAINS PER DAY
   b) SIX PASSENGER TRAINS PER DAY

2) UPRR FLAGMEN MUST BE PRESENT WHERE AT ANY TIME, ANY VEHICLES, EQUIPMENT, WORKERS, OR THEIR ACTIVITIES WILL ENCROACH IN THE AREA CLOSER THAN 25 FT. TO THE CENTERLINE OF ACTIVE TRACKS. CONTRACTOR WILL SHUT DOWN OR CLEAR EQUIPMENT WITHIN 25 FEET OF TRACK WHEN TRAINS ARE APPROACHING AS ADVISED BY UPRR FLAGMEN. RAILROAD FLAGMEN ARE FOR TRAIN MOVEMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR ALL EQUIPMENT MOVEMENTS ACROSS PUBLIC AND PRIVATE CROSSINGS. CONTRACTOR'S EQUIPMENT SHOULD BE EQUIPPED WITH RADIOS FOR BETTER COMMUNICATION WITH RAILROAD FLAGMEN.

3) RAILROAD PROTECTIVE LIABILITY INSURANCE WILL BE REQUIRED FOR THIS PROJECT. SEE SPECIAL PROVISIONS.

4) GENERAL CONTRACTOR AND SUBCONTRACTORS WILL ATTEND ALL SAFETY MEETINGS. RAILROAD WILL CONDUCT FRA REQUIRED "ON TRACK SAFETY PLAN", WHICH GENERAL CONTRACTOR, AND ALL SUBCONTRACTORS SHALL ATTEND PRIOR TO COMMENCEMENT OF CONSTRUCTION WITHIN RAILROAD RIGHT OF WAY.

5) WEARING OF FLORESCENT ORANGE VESTS, SAFETY GLASSES, SAFETY SHOES, AND HARDHATS WILL BE REQUIRED WHEN WORKING WITHIN THE RAILROAD RIGHT OF WAY.

6) ALL EXCAVATIONS AND DRILLED SHAFTS ON UPRR RIGHT OF WAY SHALL BE PROTECTED WITH BARRIERS AND/OR FENCING AT ALL TIMES.

7) UPRR PERSONNEL WILL PERFORM ALL TRACK WORK.

8) ALL UNDERGROUND UTILITIES WITHIN THE UPRR RIGHT OF WAY ARE DESIGNED FOR E80 RAILROAD LOADING AND UPRR REQUIREMENTS.

9) ALL TEMPORARY SHORING SHALL BE DESIGNED TO COMPLY WITH UPRR REQUIREMENTS. SEE SPECIAL PROVISIONS.

COOPERATION WITH UTILITIES

The Contractor shall notify all utility companies in the area to aid locating their underground services. In the event of a break in an existing utility, the Contractor shall immediately notify the responsible official of the organization operating the utility interrupted. The Contractor shall lend all possible assistance in restoring services and shall assume all costs, charges, or claims connected with the interruption and repair of such services as a result of his/her negligence.

It shall be the Contractor's responsibility to coordinate with utility companies for maintaining service and holding any utility poles that interfere with construction.

The toll free number for Joint Utility Locations Information for Excavators (J.U.L.I.E.) is 1-800-892-0123.

Compliance with this special provision shall be considered incidental to the Contract and no additional compensation will be allowed.

PROPERTY MARKERS, SURVEY MARKERS OR MONUMENTS

The markers and monuments shall be protected in accordance with Article 107.20 of the Standard Specifications for Road and Bridge Construction.

All costs incurred to comply with this special provision will not be paid for separately but shall be considered incidental to the Contract.

STATUS OF UTILITIES TO BE ADJUSTED

The following utilities are involved in this project.

Name & Address of Utility	Type	Location	Estimated Date of Relocation
CILCO 825 North MacArthur Springfield, IL 62702	Electric	B.L. I-55	During Construction
Ameritech Engineering 529 South 7th, Floor 3E Springfield, IL 62721	Telephone	B.L. I-55	During Construction
Williamsville-Sherman Water Commission 212 Middleberg Drive Sherman IL 62684	Water	B.L. I-55	During Construction
MCI Worldcom 2921 Greenbriar Drive Springfield, IL 62704 (217) 698-2613	Fiber Optic	Railroad ROW	During Construction
AT&T 620 South 5th Street Springfield, IL 62701 (217) 492-5327	Fiber Optic	Railroad ROW	During Construction
Sprint 5600 N. River Road Rosemont, IL 60018 (847) 318-3446	Fiber Optic	Railroad ROW	During Construction

Note: Ross Network Services is supervising fieldwork of fiber optic line relocation.

Ross Network Services
9416 Gulfstream Road
Frankfort, IL 60423
Attn: Mr. Bill Monti
(815) 806-0121

The above represents the best information of the Consultant and is only included for the convenience of the bidder. The applicable provisions of Article 105.07 and 107.20 of the Standard Specifications for Road and Bridge Constructions shall apply.

If any utility adjustment or removal has not been completed when required by the Contractor's operations, the Contractor should notify the Engineer in writing. A request for an extension of time will be considered to the extent the Contractor's operations were affected.

BITUMINOUS SURFACE REMOVAL (VARIABLE DEPTH)

This work shall consist of the bituminous surface removal of the existing pavement where shown on the plans and as directed by the Engineer in accordance with Article 440.03 of the Standard Specifications.

The following areas and depths of milling shall be included in this pay item:

- ½" minimum and variable along F.A.P. 666 (B.L. I-55) and Old Tipton School Road where existing pavement is to remain.

This work shall include sawing the existing pavement to obtain the satisfactory butt joint at the beginning and end of the work on F.A.P. 666 (B.L. I-55), at the beginning of work on Old Tipton School Road, and at entrances and other areas as required. Butt joints shall be constructed as specified in article 406.18 of the Standard Specifications. Removal and disposal of the bituminous concrete is also included in this pay item.

All materials, equipment, and labor necessary to complete this work as specified above and as shown on the plans will be included in the contract unit price bid per square yard for BITUMINOUS SURFACE REMOVAL (VARIABLE DEPTH).

RESTRICTED DEPTH MANHOLES

This work shall consist of constructing manholes in accordance with the applicable portions of Section 602 of the Standard Specifications, Standard 602401, and as specified herein.

Restricted depth manholes shall be used where the depth of the proposed sewer would require placement of the pipe in the conical reducer.

A precast concrete flat slab meeting the requirements of Standard 602601 shall be used in lieu of the reducer on these manholes.

This work will be paid for at the contract unit price each for RESTRICTED DEPTH MANHOLE, of the diameter and type specified, and shall include the cost of furnishing and installing the specified flat slab, frames, lids, and/or grates.

RESTRICTED DEPTH CATCH BASINS

This work shall consist of constructing catch basins in accordance with the applicable portions of Section 602 of the Standard Specifications, Standard 602016, and as specified herein.

Restricted depth catch basins shall be used where the depth of the proposed sewer would require placement of the pipe in the conical reducer.

A precast concrete flat slab meeting the requirements of Standard 602601 shall be used in lieu of the reducer on these manholes.

This work will be paid for at the contract unit price each for RESTRICTED DEPTH CATCH BASINS, of the diameter and type specified, and shall include the cost of furnishing and installing the specified flat slab, frames, lids, and/or grates.

STORM SEWER CONNECTION, SPECIAL

This work shall consist of connecting the proposed 12" storm sewer pipe to existing inlet structure along B.L. I-55 at Sta. 213+65.5, 7.0' Lt.

Connections to existing inlet structure at this location shall be performed in a manner suitable to the Engineer. The Contractor shall exercise care during removal operations as to not cause unnecessary damage to the existing inlet structure.

This work shall be paid for at the contract unit price each for STORM SEWER CONNECTION, SPECIAL.

PAVEMENT MARKING PREFORMED PLASTIC TYPE B

This work shall consist of furnishing and applying preformed plastic pavement marking, Type B, according to Section 780 of the Standard Specifications, as shown in the plans, and /or as directed by the Engineer except as herein modified.

Installation shall be according to Article 780.07(a).

FENCE REMOVAL

This work shall consist of the removal and satisfactory disposal of existing fence throughout the project that conflict with construction operations or accessibility.

Removal of existing fence shall be completed at locations as directed by the Engineer. No fence shall be removed without prior approval from the Engineer. Disposal of fence removed shall be done by means suitable to the Engineer.

Fence removal shall be measured for payment in feet along the base of the existing fence which payment will include measurement through gated openings.

This work shall be paid for at the contract unit price per foot for FENCE REMOVAL, which price shall include removal and satisfactory disposal of all fence accessories or attachments including fence posts, gates, and post foundations.

PERMANENT BARRICADES

This work shall consist of furnishing permanent Type III Barricades at the future intersection of Meredith Drive with First Street at locations as detailed in the plans.

The Type III Barricades shall meet the requirements of applicable portions of Article 702.02 and 702.03 of the Standard Specifications except that the barricades shall be permanently fixed or pinned at the base of the barricade frame by means suitable to the Engineer.

This work shall be paid for at the contract unit price each for PERMANENT BARRICADES. Unless otherwise directed, the barricades shall become the property of the Village.

SANITARY SEWERS 8"

This work shall consist of constructing sanitary storm sewer with all fittings, accessories, bedding, backfilling, compaction, and connection to municipal sewers. This work also includes testing for acceptance of the sanitary sewer.

This work shall be completed in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition, applicable portions of the IDOT "Standard Specifications for Road and Bridge Construction", adopted January 1, 2002, and as directed by the Engineer. Furthermore, all work shall meet or exceed the Village of Sherman sewer requirements.

Sanitary sewer pipe shall conform to Section 30 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition. The Contractor shall provide the Engineer with the type of sanitary sewer pipe the Contractor wished to use including all technical data supplied by the manufacturer and listings of any special provisions required to install the pipe.

Installation of the sanitary sewer shall be done in accordance with the following Sections of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition: place granular cradle per Section 20-2.20, the granular cradle shall be Type A unless otherwise specified by the Engineer; install pipe per Section 31; backfill per Section 20-2.21; and testing for acceptance of the sanitary sewer per Section 31-1.11.

This work shall be paid for at the contract unit price per foot for SANITARY SEWER 8", which price shall include all labor, fittings, accessories, bedding, backfilling, compaction, connection to municipal sewers, and testing for acceptance.

SANITARY MANHOLES

This work shall consist of all labor, materials, and equipment as required to furnish, install, and construct sanitary manholes as required to properly complete the work.

This work shall be completed in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition, applicable portions of the IDOT "Standard Specifications for Road and Bridge Construction", adopted January 1, 2002, and as

directed by the Engineer. Furthermore, all work shall meet or exceed the Village of Sherman sewer requirements.

Material and construction shall conform to the applicable portions of Section 32 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition.

The Contractor shall provide a 4-foot diameter Manhole, Type A with steps at each location shown on the plans.

Sanitary Sewer Manholes shall be constructed in accordance with Standard Drawing No. 3 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition.

Sanitary Sewer Manholes with Drop Connection shall be constructed in accordance with Standard Drawing No. 6 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition.

Placing precast sections, placing castings, and pipe connections shall meet the requirements of Section 32 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition.

Type 1 Frame and Closed lid shall be as detailed in IDOT Standard 604001-02 – Frame and Lids Type 1.

Bolt Down, Water Tight Covers shall be installed where designated on the plans. Bolt Down, Water Tight Covers shall include the frame and the cover and shall be one of the following:

Model R-1916-C manufactured by Neenah Foundry Co.
Model V-2356-2 manufactured by East Jordan Iron Works, Inc.
Pattern No. 6407 manufactured by Campbell Foundry Co.

Where Bolt Down, Water Tight Covers are specified, they shall be anchored to the manhole cone using minimum 3/8" anchors or expansion bolts.

The Engineer shall inspect all sanitary manholes prior to acceptance.

Sanitary Sewer Manholes shall be paid for at the contract unit price per each for MANHOLES, SANITARY, 4' DIAMETER, TYPE 1 FRAME, CLOSED LID, which price shall include all labor, materials, and equipment as required to furnish, install, and construct sanitary manholes, frames, and lids.

Sanitary Sewer Manholes with Drop Connection shall be paid for at the contract unit price per each for DROP SANITARY MANHOLES, WITH TYPE 1 FRAME, CLOSED LID, which price shall include all labor, materials, and equipment as required to furnish, install, and construct sanitary manholes, drop connections, frames, and lids.

Sanitary Sewer Manholes designated on the plans with water tight bolt down lids shall be paid for at the contract unit price per each for MANHOLES, SANITARY, 4' DIAMETER, 10-12 FOOT

DEPTH, BOLT DOWN, WATER TIGHT, FRAME & COVER, which price shall include all labor, materials, and equipment as required to furnish, install, and construct sanitary manholes, frames, and lids.

MANHOLE TO BE ADJUSTED (4.0 FT.)

This work shall consist of the adjustment of the height of existing sanitary sewer manholes at locations shown in the plans and as directed by the Engineer. This adjustment may include either raising or lowering the manhole rim and the installation of new bolt-down, water tight frames and covers.

Where manhole rims are to be lowered, the following procedure shall be used:

- Excavate existing ground around the manhole to an elevation a minimum of 6" below the bottom of the existing cone section.
- Remove the existing cone section.
- Install a new precast flat slab top.
- Place new frame and cover on adjusting rings to the final elevation.

Where manhole rims are to be raised by a total amount less than 18", the new frame and cover shall be set to the new elevation using steel or concrete adjusting rings.

Where manhole rims are to be raised by a total amount exceeding 18", the following procedure shall be used:

- Excavate existing ground around the manhole to an elevation a minimum of 6" below the bottom of the existing cone section.
- Remove existing cone section.
- Install new precast concrete manhole ring.
- Install existing cone section on top of new manhole ring.
- Install new frame and cover.

This work will be completed in accordance with the applicable provisions of Section 32 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition.

New frames and lids shall be Bolt Down, Water Tight Covers. Bolt Down, Water Tight Covers shall include the frame and the cover and shall be one of the following:

Model R-1916-C manufactured by Neenah Foundry Co.
Model V-2356-2 manufactured by East Jordan Iron Works, Inc.
Pattern No. 6407 manufactured by Campbell Foundry Co.

Where Bolt Down, Water Tight Covers are specified, they shall be anchored to the manhole cone using minimum 3/8" anchors or expansion bolts.

This work shall be accomplished so as not to disrupt sanitary service.

The entire manhole may be replaced at the contractor's option. Complete replacement of manholes shall be accomplished in accordance with the special provision for SANITARY MANHOLES included in these special provisions. If the contractor chooses to completely

replace the existing manholes, the work will be paid for at the price bid for MANHOLE TO BE ADJUSTED (4.0 FT) and no additional compensation will be allowed.

Adjusting of existing manholes will be paid for at the contract unit price per each for MANHOLE TO BE ADJUSTED (4 FT.), which price shall include all labor, materials, frames and covers, and equipment as required to adjust manholes as described herein.

WATER MAIN

This work shall consist of constructing water main of the size shown on the plans with all fittings, accessories, bedding, backfilling, compaction, and connection to municipal water main. This work also includes testing for acceptance of the new water main.

This work shall be completed in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition, applicable portions of the IDOT "Standard Specifications for Road and Bridge Construction", adopted January 1, 2002, and as directed by the Engineer. Furthermore, all work shall meet or exceed the Village of Williamsville Water Department requirements.

Water main and fittings shall be AWWA C900, Class 150, SDR 18 pipe and shall conform to Section 40 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition. The Contractor shall provide the Engineer with product data of the watermain material the Contractor wished to use including all technical data supplied by the manufacturer and listings of any special provisions required to install the pipe.

Installation of the water main shall be done in accordance with Section 41 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition. Disinfection and testing of the water main shall be included in this item. Minimum depth of bury shall be 48".

Water main conduits shall be backfilled to finished subgrade elevation with CA-6 select granular backfill. The backfill shall be mechanically compacted in lifts to 95% Standard Proctor.

Tracer wire or tape shall be installed in the trench above the center of the water main. Tracer wire shall extend the entire limits of the water main and shall be connected at each end to existing hydrant, valve, or tracer wire system.

Tracer wire material shall be manufactured specifically for installation in the ground and for the purpose of location of buried conduits. Tracer wire shall be THWN soft drawn solid No. 12 copper and shall be connected to all valves and hydrants.

This work shall be paid for at the contract unit price per foot for WATER MAIN of the size shown in the plans, which price shall include all labor, fittings, accessories, tracer wire, bedding, backfilling, compaction, disinfection, and testing for acceptance.

CONNECTION TO EXISTING WATER MAIN

Connection of new water main to the existing water main shall be made at the locations shown in the plans using a pressure type connection with no disruption to service. The Contractor shall notify the Williamsville Department of Water and the Engineer a minimum of 48 hours in advance of making the pressure tap.

The contractor shall submit product data for pressure tap fittings to the Williamsville Department of Water and the Engineer for approval a minimum of 4 weeks prior to making the connection.

The cost of making the pressure connection, including materials, labor, and equipment shall be included in the contract unit price per each for CONNECTION TO EXISTING WATER MAINS (PRESSURE) 6".

FIRE HYDRANTS

Fire hydrants shall be furnished and installed at the locations shown in the plans and as directed by the Engineer.

This work shall be completed in accordance with the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition, applicable portions of the IDOT "Standard Specifications for Road and Bridge Construction", adopted January 1, 2002, and as directed by the Engineer. Furthermore, all work shall meet or exceed the Village of Williamsville Water Department requirements.

Fire Hydrants shall be Mueller Super Centurion A-423 Flanged or Kennedy Guardian K81-A Flanged or approved equal. They shall be three-way AWWA Type Fire Hydrants with 5.25" valve opening.

One maintenance and repair tool kit and one collision repair kit shall be furnished to the Williamsville Water Department as part of this project.

The cost of furnishing and installing fire hydrants including material, repair kits, labor, and equipment shall be included in the contract unit price per each for FIRE HYDRANTS.

WATER VALVES

Water valves of the size designated in the plans shall be furnished and installed at the locations shown in the plans and as directed by the Engineer.

This work shall be completed in accordance with Section 42 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition, and as directed by the Engineer. Furthermore, all work shall meet or exceed the Village of Williamsville Water Department requirements.

Each water valve shall be installed in a standard cast iron valve box in accordance with Standard Drawing No. 14 of the "Standard Specifications for Water and Sewer Main Construction in Illinois", May 1996 Fifth Edition.

Water valves shall be compatible with type and size pipe used for WATER MAIN.

One operating wrench compatible with the water valves for the project shall be furnished to the Williamsville Water Department as part of this project.

The cost of furnishing and installing water valves including material, valve box, operating wrench, labor, and equipment shall be included in the cost per each for WATER VALVES of the size shown in the plans.

WATER MAIN ENCASEMENT

This work shall consist of furnishing and installing a split steel casing onto an existing 6" PVC water main at the location shown in the plans.

Split steel casing pipe shall have minimum yield strength of 35,000 psi. The minimum wall thickness shall be 0.250 inches. Casing shall be solid rolled steel and shall not be spiral welded steel. Casing shall be galvanized or have an approved exterior coating.

Casing pipe shall be furnished with an inside diameter a minimum of 2" larger than the outside diameter of the pipe to be encased. Casing pipe shall be fabricated specifically for the encasement of existing pipelines and shall have a mechanical means of connection of the two split halves as well as a means of connecting longitudinal sections.

The cost of furnishing and installing water main encasement material, labor, and equipment shall be included in the contract unit price per foot for WATER MAIN ENCASEMENT.

AGGREGATE FOR TEMPORARY ACCESS

This work shall consist of furnishing and placing aggregate surface course, type B at the following location:

- Rt. Sta. 209+50 (B.L. I-55), and any other locations as directed by the Engineer.

Materials shall meet the requirements of Article 1004.04.

The Contractor shall construct and maintain an aggregate surface course for temporary access according to Article 402.07 and as directed by the Engineer. The same type and gradation of material used to construct the temporary access shall be used to maintain it.

When use for the temporary access is discontinued, the surface aggregate used in its construction shall be removed and utilized in the permanent construction or disposed of according to Article 202.03.

This work shall be paid for at the contract unit price per ton for AGGREGATE FOR TEMPORARY ACCESS.

SHOP DRAWING REVIEW

Shop drawings shall be sent to IE Consultants, Inc. for review at the following address:

6420 South 6th Street
Springfield, IL. 62707
Attn: Mr. David Booher

ELASTOMERIC BEARINGS, TYPE I (SPECIAL)

This item shall consist of furnishing and installing elastomeric bearings as detailed in the plans. This work will be done in accordance with the applicable portions of Section 503 of the Standard Specifications.

This item shall be paid for at the contract unit price per each for ELASTOMERIC BEARING ASSEMBLY, TYPE I (SPECIAL), which price shall include furnishing and installing bearing assemblies as detailed in the plans.

PVC CONDUIT IN TRENCH

This item shall consist of furnishing and installing PVC conduit of the size, type, and location shown in the plans. This work also includes capping of the conduit ends and furnishing and installing end markers. This conduit will be buried in place for future use by others.

Conduit shall be Schedule 80 PVC meeting the requirements of ASTM D1785. Conduit fittings shall be pressure fittings and shall conform to the requirements of ASTM D2467 (Solvent Welded).

Conduit shall be installed in accordance with the applicable portions of Section 810 of the IDOT Standard Specifications. Where two or more conduits are laid side by side, they shall be placed a minimum of 5' apart, each in their own trench.

The terminal ends of the conduits shall be capped with a PVC slip cap. Caps shall be pushed into place dry with no cement or solvent. The trench shall be carefully backfilled around the cap so as not to loosen the cap.

End markers shall be installed at the terminal ends of each conduit for ease in future locating. End markers shall be 4" x 4" treated wood posts buried vertically with the bottom end at the conduit invert and the top end cut off 6" above finished grade. The top 12" of the end marker shall be painted orange. The contractor shall maintain the end markers in good condition until the completion of the project.

This work will be measured for payment in feet in place. Measurements will be made in straight lines along the center of the conduit.

This work will be paid for at the contract unit price per foot for PVC CONDUIT IN TRENCH, 4" (SCHEDULE #80), which price shall include furnishing and installing conduit, fittings, and end markers.

SIGNAL HEAD, ALUMINUM:

Effective: September 7, 2001

This work shall consist of furnishing and installing a signal head with the number of sections and faces indicated on the plans in accordance with Sections 880 and 1078.01 of the Standard Specifications for Road and Bridge Construction and the following additions or exceptions.

Approved Products: Manufactures of approved LED signals meeting this specification are GelCore and Dialight.

Housing: The signal head housing shall be aluminum.

Optical Unit: All red, amber, green, red arrow, yellow arrow and green arrow indications in conventional signal heads shall be illuminated with light emitting diode (LED) modules. LED modules shall conform to ITE, Vehicle Traffic Control Signal Heads (VTSCH) specifications and standards for LED vehicle traffic signal modules and the following:

1) The LED module shall operate between -40° F and +165° F throughout an operating voltage range of 80VAC to 135 VAC.
2) The lens of each indication shall be tinted with a wavelength-matched color to reduce sun phantom effect and enhance on/off contrast. The tinting shall be uniform across the lens face. If a polymeric lens is supplied, a surface coating shall be applied to provide abrasion resistance.
3) LED modules shall not contain Aluminum Gallium Arsenide (AlGaAs) LEDs.
4) LED modules shall provide constant light output under power. Modules with dimming capabilities shall have the option disabled or set to a non-dimming operation.
5) In the event of a power outage, light output from the LED module shall cease instantaneously.
6) The power supply for the LED module shall be integral to the unit.
7) Photometric Requirements: The candlepower values for yellow 12-inch circular modules in Table 1, VTSCH, Part 2 shall be equal to the corresponding values for green 12-inch circular modules.
   The maintained minimum intensities for 12-inch arrow modules throughout the warranty period under the operating temperature and voltage range, and at the end of the warranty period shall not be less than the following values:

Maintained Minimum Intensities (in cd/m^2)	
Red	5,500
Yellow	11,000
Green	11,000

Electrical Requirements: When applicable to the particular module type, the LED signal module conforms to EPA's Energy Star requirements. The yellow LED modules shall conform to the following wattage requirements:

Module Type	Maximum Watts (at 74°C)	Nominal Watts (at 25°C)
12-inch circular yellow	25	22
12-inch yellow arrow	12	10

Warranty Provisions: The LED modules, which exhibit luminous intensities less than the minimum values specified within the first 60 months of the date of delivery shall be promptly replaced or repaired by the manufacturer at no cost to the state.

Basis of Payment: This item will be paid for at the contract unit price each for SIGNAL HEAD, LED, ALUMINUM of the number of sections, faces and mounting types indicated on the plans for supplying, installing and placing into operation the signal head.

ELECTRIC CABLE:

Effective November 1, 1984
Revised September 7, 2001

This work shall consist of furnishing and installing electric cable of the type size and number of conductors specified, in accordance with the requirements of Section 873 and 1076.04 of the Standard Specifications for Road and Bridge Construction except as described herein.

All stranded wire connections in signal heads, push buttons, terminal compartments shall be made with insulated spade connections.

Cables shall be identified by color-coded tape applied at both the signal and controller ends. The color-coding shall be as shown on the plans.

The cable will be paid for the vertical length of all traffic signal post. All other vertical cable lengths shall be paid for as prescribed in the Standard Specifications.

Basis of Payment: This work will be paid for at the contract unit price per meter (foot) for ELECTRIC CABLE of the type, size, and number of conductors specified, which price shall be payment in full for furnishing the material and making all electrical connections and installing the cable complete.

FULL-ACTUATED CONTROLLER:

This item shall consist of furnishing, installing and placing into operation a multi-phase microprocessor based controller at the location(s) indicated on the plans, or as directed by the Engineer. The controller shall comply with the requirements of Sections 857, 1073.01 and 1074.03 of the Standard Specifications for Road and Bridge Construction and the following additions or exceptions.

General: The controller shall meet the requirements of the NEMA TS2 standards for a Type 1 controller. Data entry shall be by keyboard or personal computer. The controller shall be fully compatible with the NTCIP Standard.

If rivets are exposed on the outside of the cabinet, they shall be either stainless steel or aluminum to prevent oxidation.

The controller timings shall be stored in a data module, which shall be easily removable to transfer data to another controller of the same type.

There shall be three communications ports. Port 1 shall be a high-speed serial bus for communications with the Malfunction Management Unit, Terminals and Facilities, and detection. Communications shall be SDLC format with defined protocol, EIA RS-485 interface. Port 2 shall be an EIA RS-232C interface to allow use of a personal computer for data entry and transfer of status and events or output of timing and operational data to a printer. Port 3 shall be for systems interface.

Coordination: The coordinator shall provide a minimum of sixteen timing plans with a minimum of one cycle length, one set of splits and three offsets per timing plan. Cycle lengths shall be adjustable from 30-255 seconds, splits and offsets shall be set in seconds or percent, and offsets reference to beginning of green of the first served coordinated phase.

Diagnostics: The controller and terminal facility shall have full diagnostics in accordance with the NEMA TS2 standard.

Malfunction Management Unit: The malfunction management unit shall be a Type 1 sixteen channel with three inputs per channel.

Terminals and Facilities: The terminal facilities shall have TS1 compatible load switches, flasher and flash transfer relay. The backpanel must accommodate 12 load switches.

All main panel wiring shall conform to the following wire size and color:

Green/Walk load switch output		brown wire, 14 gauge
Yellow load switch output		yellow wire, 14 gauge
Red/Don't Walk load switch output		red wire, 14 gauge
MMU (other than AC power)		violet wire, 22 gauge
Controller I/O		blue wire, 22 gauge
AC Line - power panel to main panel (1 for each 4 LS)		black wire, 10 gauge
AC Line – main panel		black wire, 14 gauge
AC Neutral – power panel to main panel		white wire, 10 gauge
Earth ground – power panel		green wire, 8 gauge
Flash programming	flasher terminal	orange wire,14 gauge
	Red or yellow field terminal	black wire, 14 gauge

The main panel shall incorporate a relay to remove +24 VDC from the common side of the load switches when the intersection is placed into flash. The relay shall have a momentary pushbutton to apply power to the load switch input for troubleshooting.

A Bus Interface Unit (BIU) shall be used for I/O electronics.

Detection interface to the controller shall be through a BIU.

The surge suppression for the controller cabinet shall be an EDCO SHA 1250, base mounted. The normally open contacts of the suppressor shall be wired to the alarm 2 input of the controller for system monitoring.

Ground Rod Testing: The ground rod in the controller cabinet shall be tested as described in Article 801.11(f) of the Standard Specifications. Any ground rod with a resistance greater than the 10 ohms specified shall be rectified by the installation of additional ground rod(s) or grounding fields until satisfactory resistance to ground is obtained to the satisfaction of the Engineer. The installation of additional ground rod(s) will be incidental to the controller cost.

Basis of Payment: This item will be paid for at the contract unit price each for FULL-ACTUATED CONTROLLER, of the sequence, phasing, and cabinet shown on the plans, which price shall be payment in full for furnishing the controller, cabinet, and all associated equipment required, installing the unit complete in place and placing the unit into operation to the satisfaction of the Engineer.

VIDEO VEHICLE DETECTION SYSTEM

Revised: August 1, 2002

This work shall consist of furnishing, installing and placing into operation a vehicle detection system, which detects vehicles by processing video images and providing detection outputs to a traffic signal controller. This equipment shall meet the NEMA environmental, power and surge ratings as set forth in NEMA TS1 and TS2 Specifications.

Hardware: The machine vision sensors shall be four integrated imaging CCD arrays with optics, high-speed, color, image-processing hardware and a CPU bundled into a sealed enclosure. The environmental enclosure shall be waterproof and dust-tight to NEMA-4 specifications, and shall be pressurized with dry nitrogen to 5 ± 1 psi. The enclosure shall allow the machine vision sensor to operate satisfactorily over an ambient temperature range from -34 degrees C to +60 degrees C while exposed to precipitation as well as direct sunlight. The enclosure shall allow the image sensor horizon to be rotated during field installation. The enclosure shall include a provision at the rear of the enclosure for connection of the factory-fabricated power, communications and video signal cable. Input power to the environmental enclosure shall be 24 VAC/DC and either 50 or 60 Hz. A heater shall be at the front of the enclosure to prevent the formation of ice and condensation in cold weather, as well as to assure proper operation of the lens' iris mechanism.

Functional: The machine vision sensor shall be able to be programmed with a variety of types that perform specific functions selectable by software. Detector types shall includ stopline detectors capable of providing presence of moving vehicle detection based up status, presence detectors, directional presence, and input detectors. Additionally, phas or red shall be displayed. The unit shall monitor a programmable contrast detector and video loss timing parameters to the output by implementing minimum, maximum, or use defined fixed time recall the assigned phase(s). The detector shall be capable of having Boolean logic applied to multiple detectors or a minimum number of detectors out of a t present, prior to placing a call.

Detector features shall include:

a. Count detection - outputs traffic volume statistics and generates traffic counts occupancy.
b. Presence detection - indicate presence of a vehicle, stopped vehicle, or vehic traveling in the wrong direction.
c. Speed detection - provide vehicle counts, speed, length, and classification.
d. Detector function combines - outputs of multiple detectors via Boolean logic f
e. Label displays - information on the machine vision video output and passes in information to other detectors.
f. Detector Station - collects and reports traffic data gathered over specified time intervals.
g. Incident detection - monitor traffic parameters for conditions that indicate an i has occurred, such as an accident or a stalled vehicle that results in a sudden re in roadway capacity or throughput.
h. Schedulers - define plans that can be used by other detectors to specify diffe parameters for each time-of-day plan.
I. Contrast Loss detection - monitor the quality of the video image that the mac vision sensor is processing.
j. Speed Alarm - generates alarm outputs based on user-defined algorithms usir speed.

External Interfaces: The external interfaces to the machine vision sensor shall include a port specifically to exchange detector state data with the cabinet interface devices, diffe color video output, and 24 VAC/DC power to operate the sensor.

Sensor Field Interface Equipment: A communications panel shall be provided with each machine vision sensor for installation. The communications panel shall provide a termin for terminating power and four twisted-pair wiring to the image sensor.

Supervisor Communications Port: There shall be a supervisor communications port to c and provide general communications. The machine vision sensor shall use an RS-485 drop network protocol to facilitate communications via a network of rack cards to a rem local PC client/server application. The communications port shall allow the user to upda embedded software with a new software release and interact with a PC client/server ap for all of the various detection requests supported by the machine vision sensor.

The heater shall not interfere with the operation of the image sensor electronics, and it shall not cause interference with the video signal. The enclosure shall be light-colored and shall include a sun shield to minimize solar heating and glare. The front edge of the sunshield shall protrude beyond the front edge of the environmental enclosure and shall include provision to divert water flow to the sides of the sunshield. The amount of overhang of the sunshield shall be adjustable to prevent direct sunlight from entering the lens or hitting the faceplate. The total weight of the image sensor in the environmental enclosure with sunshield shall be less than 2.7 kg (6 pounds). When operating in the environmental enclosure with the power, communication and video signal cable connected, the image sensor shall meet FCC class B and CE requirements for electromagnetic interference emissions.

The CCD arrays shall be directly controlled by the CPU, thus providing high video quality for detection that has virtually no noise to degrade detection performance. The optics and camera electronics shall be directly controlled for optimal illumination for traffic detection. The lens shall be pre-focused at the factory, as required for operation. It shall be possible for the user to focus the lens, as required for operation. The machine vision sensor shall operate at a maximum rate of 30 frames per second when configured for the NTSC (US)color video standard. The machine vision sensor shall process a minimum of twenty detector zones placed anywhere in the field of view of the sensor. The video output shall have the ability to selectively show overlaid graphics indicating the current real-time detection state of each individual detector defined in the video. The sensor output NTSC color video shall be viewed with any compatible video-display device.

Sensor Hardware: The machine vision sensor shall use medium resolution color image sensors as the video source for real-time vehicle detection using either NTSC or PAL formats. As a minimum each image sensor shall produce images with a CCD sensing element with horizontal resolution of at least 500 lines and vertical resolution of at least 350 lines. Images shall be output as video conforming to NTSC or PAL specifications and provide software JPEG video compression with a useable video and resolvable features in the video image when those features have luminance levels as low as 0.1 lux at night. Useable video and resolvable features in the video image shall also be produced when those features have luminance levels as high 10,000 lux during the day.
Useable video and resolvable features in the video image shall be produced when the ratio of the luminance of the resolved features in any single video frame is 300:1. The sensor shall provide direct real-time iris and shutter speed control, be usable for video surveillance, provide an optical filter and appropriate electronic circuitry in the sensor to suppress "blooming " effects at night, and have gamma for the image sensor present at the factory to a value of 1.0.

Sensor Optics: The machine vision sensor shall be equipped with an integrated zoom lens with zoom and focus capabilities that can be changed using either configuration computer software or a hand-held controller.

The communications protocol over the supervisor communications port shall be the UDP/IP message packet and routing standard. This protocol shall be used throughout the field network of machine vision sensors, hubs and the host PC server application.

Detector I/O Port: The machine vision sensor detector port shall provide a dedicated, RS-485, half-duplex interface between the machine vision sensor and a detector port master such as a card rack or TS2 mini-hub. The real-time state of phase inputs shall be transmitted to the machine vision sensor. The machine vision sensor shall exchange input and output state data with the detector port master every 100 ms. The communications protocol shall be UDP/IP over the single twisted-pair wiring. A detector port master such as a TS2 mini-hub shall subsequently translate the detection states in an electrically compatible manner to a traffic signal controller:

(1) The interface card immediately upon receipt of the state change shall apply single pin state outputs and each on or off pulse shall be guaranteed a minimum pulse width of 100 ms.

(2) Speed outputs from 2 pins shall reflect the true output of the delay proportional to measured speed within ±1 ms.

Differential Video: The machine vision sensor shall output full motion video using a differential video port in either NTSC or PAL format. The differential video shall be transmitted over a single twisted pair.

Power: The machine vision sensor shall operate on 24 VAC/DC, 50/60 Hz at a maximum of 25 watts. The camera and processor electronics shall consume a maximum of 10 watts. The remaining 15 watts shall support an enclosure heater.

Sensor Operations Log: The machine vision sensor shall maintain a non-volatile operations log, which minimally contains:

a. Revision numbers for the current machine vision sensor hardware and software components in operation.

b. Title and comments for the detector configuration.

c. Date and time the last detector configuration was downloaded to the machine vision sensor.

d. Date and time the operation log was last cleared.

e. Date and time communications were opened or closed with the machine vision sensor.

f. Date and time of last power-up.

g. Time-stamped, self-diagnosed hardware, and software errors that shall aid in system maintenance and troubleshooting.

Sensor Vehicle Detection Performance: The real time detection performance of the machine vision sensor shall be optimized by following the guidelines for the traffic application including, machine vision sensor mounting location; the number of traffic lanes to monitor; the sizing, placement, and orientation of vehicle detectors; traffic approaching and/or departing from the sensor 's field of view; and minimizing the effects of lane changing maneuvers.

Detection Zone Placement: The video detection system shall provide flexible detection zone placement anywhere and at any orientation within the field of view of the machine vision sensor. Preferred detector configurations shall be detection zones placed across lanes of traffic for optimal count accuracy, detection zones placed parallel to lanes of traffic for optimal presence detection accuracy of moving or stopped vehicles. A single detection zone shall be able to replace one or more conventional detector loops
connected in series. Detection zones shall be able to be overlapped for optimal road coverage. In addition, selective groups of detectors shall be able to be logically combined into a single output by using optional delay and extend timing and signal state information. Optimal detection shall be achieved when the machine vision sensor placement provides an unobstructed view of each traffic lane where vehicle detection is required. Obstructions are not limited to fixed objects. Obstruction of the view can also
occur when vehicles from a lane nearer to the sensor obscure the view of the roadway of a lane further away from the sensor.

Detection Zone Programming: Placement of detection zones shall be by means of a portable or desktop computer using the Windows 95, 98, Millennium, Windows NT 4.0, or 2000 operating systems, a keyboard, and a mouse. The VGA monitor shall be able to show the detection zones superimposed on images of traffic scenes. The mouse and keyboard shall be used to place, size, and orient detection zones to provide optimal road coverage for vehicle detection; modify detector parameters for site geometry to optimize performance; edit previously defined detector configurations; adjust the detection zone size and placement; add detectors for additional traffic applications; reprogram the sensor for different traffic applications, changes in installation site geometry, or traffic rerouting.

It shall be possible to download detector configurations from the computer to the machine vision sensor; upload the current detector configuration that is running in the machine vision sensor; back up detector configurations by saving them to the computer's removable or fixed disks; perform the above upload, store, and retrieve functions for video snapshots of the machine vision sensors' view.

Optimal Detection: The video detection system shall provide optimal detection of vehicle passage and presence when the machine vision sensor is mounted 30 ft. or higher above the roadway, the image sensor is adjacent to the desired coverage area and the distance to the farthest detection zone locations is not greater than 10 times the mounting height of the machine vision sensor.

The machine vision sensor shall be able to view either approaching or departing traffic or both in the same field of view. The machine vision sensor, when placed at a mounting height that minimizes vehicle image occlusion and equipped with a lens to match the width of the road shall be able to monitor a maximum of 6 to 8 traffic lanes simultaneously.

Detection Zone Operation: The machine vision sensor's real-time detection operation shall be verifiable through the following means:

a. View the video output of the sensor with any standard video display device (monitor).
b. The video output of the machine vision sensor (differential twisted pair) shall be capable of selectively transmitting:
    (1) Camera video only.
    (2) Analog video overlaid with the current real-time detection state of each detector.
    (3) Camera video with overlaid, scaled cross-hairs that are used for aiming the sensor (during installation).
    (4) Individual detectors shall have the option of being hidden.
c .Electrically monitor assigned contact closure pinouts from a detector port master such as a TS2 Mini-Hub interface card, or Detector Rack interface card. Each pin of an interface card shall have one associated LED output to reflect its output state.
d. View the associated output LED state on the detector port master:
    (1) An LED shall be ON when its assigned detector output or signal controller phase input is on.
    (2) An LED shall be OFF when its assigned detector or signal controller input is off.

Count Detection Performance: Using a machine vision sensor installed within the optimal viewing specifications described above for count station traffic applications the system shall be able to accurately count vehicles with at least 96%accuracy under normal operating conditions (day and night) and at least 93%accuracy under adverse conditions. Adverse conditions are combinations of weather and lighting conditions that result from shadows, fog, rain, snow, etc.

Demand Presence Detection Performance: Using a machine vision sensor installed within the optimal viewing specifications described above for intersection control applications the system shall be able to accurately provide demand presence detection. The demand presence accuracy shall be based on the ability to enable a protected turning movement on an intersection stop line, when a demand exists. The probability of not detecting a vehicle for demand presence shall be less than 1-percent error under all operating conditions. In the presence of adverse conditions, the machine vision sensor shall minimize extraneous (false) protected movement calls to less than 7 %.

Speed Detection Performance: The machine vision sensor shall accurately measure average (arithmetic mean) speed of multiple vehicles with more than 98%accuracy under all operating conditions for approaching and departing traffic. The average speed measurement shall include more than 10 vehicles in the sample to ensure statistical significance. Optimal speed detection performance requires the sensor location to follow the specifications described above for count station traffic applications with the exception that the sensor must be higher than 40 feet. The machine vision sensor shall accurately measure individual vehicle speeds with more than 95% accuracy under all operating conditions for vehicles approaching the sensor (viewing the front end of vehicles), 90% accuracy for vehicles departing from the sensor (viewing the rear end of vehicles).

These specifications shall apply to vehicles that travel through both the count and speed detector pair and shall not include partial detection situations created by lane changing maneuvers.

Sensor Electrical: The video output of the machine vision sensor shall be isolated from earth ground. All video connections from the sensor to the interface panel shall also be isolated from earth ground. The video output, communication, and power stages of the sensor shall include transient protection to prevent damage to the sensor due to voltage transients occurring on the cable leading from the machine vision sensor to other field terminations. Connections for video, communications and power shall be made to the image sensor using a single 18-pin circular metal shell connector (Bendix PT07C-14-18P or equivalent). The mating cable shall use a right-angle shell. The machine vision sensor shall have passed requirements for and received the CE mark. The power to the sensor shall be fused in the controller cabinet.

Auxiliary Equipment: The system shall be supplied with a color 10-inch monitor in the controller cabinet to display a camera field of view with detection areas overlaid. The input to the monitor shall be selectable from any of the cameras in the system via a push button selector device.

Training: The supplier of the video detection system shall provide two days of training to maintenance and engineering personnel in the operation, setup and maintenance of the video detection system.

Basis of Payment: This work will be paid for at the contract unit price each for VIDEO VEHICLE DETECTION SYSTEM, which price shall be payment in full for furnishing, installing, and placing into operation the equipment specified to the satisfaction of the Engineer.

COMBINATION MAST ARM ASSEMBLY AND POLE:

This work shall conform to the requirements of Sections 877 and 1077.03 of the Standard Specifications and the following additions or exceptions.

The combination mast arm assembly shall be supplied with tenon top for mounting the luminaire, twin tenon or video camera as indicated on the plans.

Basis of Payment: This work will be paid for at the contract unit price each for STEEL COMBINATION MAST ARM ASSEMBLY AND POLE of the signal arm length specified.

CONDUIT:

This work shall consist of furnishing and installing a conduit of the type and size specified in accordance with Sections 810 and 1088.01(b) or 1088.01(c) of the Standard Specifications for Road and Bridge Construction except as described herein.

PVC Conduits: When it is necessary to connect PVC conduit to steel conduit a heavy wall set screw connector with a PVC female adapter shall be installed and sealed by duct seal and plastic tape.

When conduit are installed in the excavation in back of curb, the conduit shall be installed below driveway and entrances at a depth, which will prevent the conduit from protruding into the entrance pavement material.

PVC Conduit, Augered: The term augered shall cover both the pushed and bored method of installing conduit. Because of differences in equipment and techniques, the contractor may use either method to install the conduit for the term AUGERED.

In the event that latent subsurface physical conditions are encountered which prevents the conduit of pilot hole from being augered or pushed through the entire conduit run in three (3) sincere attempts, as determined by the Engineer, compensation for the proposed conduit run will be as follows:

1. The Department will delete the contract specified method of payment for the subject conduit run.

2. The Department will pay for the installation of the conduit run and the three unsuccessful attempts to install the conduit run, under Article 109.04 of the Standard Specification on the force account basis.

3. The Engineer will determine the method to be utilized to install the conduit run.

Basis of Payment: This work will be paid for at the contract unit price per foot (meter) for CONDUIT, of the size and type specified, which price shall be payment in full for furnishing and installing the conduit and fittings complete.

FIBER OPTIC CABLE:

This work shall consist of furnishing and installing a fiber optic cable in accordance with the requirements of Sections 871 and 1076.02 of the Standard Specifications for Road and Bridge Construction and the following additions.

All fibers within the cable shall be terminated with a ST connector. Unused fibers shall be secured within the distribution enclosure and readily available for use.

Locator Wire: A #14 AWG minimum, THHN wire shall be installed along side of the fiber optic cable. The wire shall be secured in the control cabinet to prevent accidental removal. The locator wire shall not be terminated to the control facility. If the existing interconnect cable remains in place in a continuous run between cabinets, then the locator wire may be omitted.

Basis of Payment: This work will be paid for at the contract unit price per meter (foot) for FIBER OPTIC CABLE, of the type, size, and number of fibers indicated on the plans, which price shall be payment in full for furnishing the material and making all fiber connections and installing the cable complete.

TRANSCEIVER – FIBER OPTIC:

This work shall consist of furnishing, installing and placing into operation a fiber optic transceiver in accordance to Article 864 of the Standard Specifications for Road and Bridge Construction and the following additions or exceptions.

The transceiver shall allow for communications with full upload download capabilities with the existing Econolite ASC/2M master controller at B.L. I-55 and Cabin Smoke Trail. All cables, distribution enclosures, and fiber optic modems are to be installed within the existing controller cabinets. The fiber modems shall be external to the controller and powered by the transceiver module or external power source. Communications on the fiber network shall remain intact, even with the removal of a transceiver module. The transceiver shall enable 9600 baud communications between the controller and the master controller.

Basis of Payment: This work will be paid for at the contract unit price each for TRANSCEIVER - FIBER OPTIC, which price shall be payment in full for furnishing, installing, and placing into operation the equipment specified herein.

POROUS GRANULAR BACKFILL, SPECIAL

This work shall consist of furnishing and installing porous granular embankment behind the bridge abutments as shown in the plans and as directed by the Engineer. This work shall be done in accordance with the applicable requirements of Section 207 of the Standard Specifications for Road and Bridge Construction except that the embankment material shall meet the requirements of CA7 as defined in Section 1004 of the Standard Specifications for Road and Bridge Construction.

This work will be paid for at the contract unit price per ton for POROUS GRANULAR BACKFILL, SPECIAL, which price shall include furnishing, placing and compacting all materials for porous GRANULAR BACKFILL, SPECIAL construction.

MEMBRANE WATERPROOFING (SPECIAL)

This work shall consist of furnishing and placing a membrane waterproofing system as shown on the Contract Plans and as specified herein. Membrane waterproofing of the concrete deck slab shall be a 60 mil butyl rubber or EPDM membrane with asphaltic protection boards. The waterproofing system shall also include but is not limited to furnishing and installing joint cover plates, sheet metal cover plates, armor plates, threaded inserts and galvanized bolts. All work shall be performed in accordance with Chapter 29 of the 2002 American Railway Engineering and Maintenance-of-way Association (AREMA) Manual for Railway Engineering.

Method of Measurement. The membrane waterproofing system, complete in place and accepted, will be measured for payment and the area computed in square feet of bridge deck surface covered. No measurement or allowance will be made for laps, material used for extensions over lips or edges, or for repairs.

Basis of Payment. This work will be paid for at the contract unit price per square foot for MEMBRANE WATERPROOFING (SPECIAL).

SUB-BALLAST

Description. This work shall consist of furnishing, placing and compacting sub-ballast for the shoofly track. (Sub-ballast for the INSTALLATION OF TRACKWORK ON NEW BRIDGE AND APPROACHES shall be incidental to that bid item). Sub-ballast shall be crushed aggregate base and placed according to Section 301-2 of APWA's Standard Specifications for Public Works Construction (or approved equal) to the thicknesses shown on Standard Drawing 0001.

Method of Measurement. Aggregate used for sub-ballast will be measured for payment in tons in accordance with these specifications and Standard Drawings.

Basis of Payment. Sub-ballast will be paid for at the contract unit price per ton for SUB-BALLAST which price shall include performing all of the work specified.

BRIDGE FENCE RAILING, PARAPET MOUNTED

Description. This work shall consist of furnishing and erecting the chain link railing on the bridge superstructure and abutments as shown on the Contract Plans and as specified herein. The contract unit price per foot for BRIDGE FENCE RAILING, PARAPET MOUNTED shall also include furnishing all materials and installing the closure plates as shown and detailed on the Contract Plans. Installation of fabric material located between the abutment end posts and the posts on the adjacent retaining walls will be incidental to BRIDGE FENCE RAILING, PARAPET MOUNTED.

Method of Measurement. BRIDGE FENCE RAILING, PARAPET MOUNTED will be measured for payment in feet, along the top of the rail from center to center of posts on the abutment wings and along the bridge parapets.

Basis of Payment. This work will be paid for at the contract unit price per foot of BRIDGE FENCE RAILING, PARAPET MOUNTED which price shall include furnishing all materials and installing the complete chain link railing as shown on the Contract Plans.

BRIDGE DRAINAGE SYSTEM

Description. This item shall include the furnishing of all labor, material and equipment required for the installation of the bridge deck drainage system as shown on the Contract Plans, complete in place and ready for use, including the six inch diameter P.V.C. down spout pipes and connection to the collector pipe.

Corrugated, perforated, steel pipe shall satisfy the material requirements of Section 1006.01 of the Standard Specifications. Polyvinyl Chloride (PVC) pipe shall satisfy the material requirements of Section 1040.10 of the Standard Specifications.

Method of Measurement. BRIDGE DRAINAGE SYSTEM will be measured as a unit acceptably completed as shown on the plans and as specified.

Basis of Payment. BRIDGE DRAINAGE SYSTEM will be paid for at the contract lump sum price bid, as specified and detailed.

FURNISHING AND ERECTING PRECAST PRESTRESSED CONCRETE I-BEAMS, 48" (SPECIAL)

This work shall consist of furnishing and erecting PPC I-Beams in accordance with Section 504 of the Standard Specifications for Road and Bridge Construction except as modified herein.

Dimensions and details of PPC I-Beams shall be as shown in the plans. The contractor shall note that the beams used in this project differ in dimension and details from Illinois Department of Transportation standard PPC I-Beams.

Prestressing strands shall be cut off so that 5' of exposed prestressing strand extends beyond each end of each beam. The extended prestressing strands shall be protected to prevent breakage during shipping and erection. The prestressing strands shall be incorporated into the abutment

concrete as shown in the plans.

Method of Measurement. FURNISHING AND ERECTING PRECAST PRESTRESSED CONCRETE I-BEAMS, 48" (SPECIAL) will be measured for payment in feet, along the top of the beam from end to end along the centerline of beam.

Basis of Payment. This work will be paid for at the contract unit price per foot for FURNISHING AND ERECTING PRECAST PRESTRESSED CONCRETE I-BEAMS, 48" (SPECIAL) which price shall include furnishing all materials, labor, and equipment required to fabricate, ship, and erect the PPC I-Beams as shown on the Contract Plans.

TRACKWORK

DEFINITIONS AND TERMS

Railroad
Union Pacific Railroad

Standard Drawings
Union Pacific Railroad standard drawings, as attached hereto and made a part of these specifications.

Contract Plans
The official plans, profiles, cross sections, working drawings, and supplemental drawings, or reproductions thereof , approved by the Railroad Engineer, which show the location, character, dimensions, and detail of the work to be performed and such plans, profiles, cross sections, working drawings and supplemental drawings are to be considered a part of these specifications.

Railroad Engineer
The authorized representative of the Union Pacific Railroad's Chief Engineer.

Inspector
The authorized representative of the Railroad Engineer.

APWA
American Public Works Association.
AREMA
American Railway Engineering and Maintenance-of-way Association.

AWPA
American Wood Preserving Association.

CWR
Continuous Welded Rail.

Contractor
The party accepting the overall responsibility for fulfilling the requirements of these specifications.

Approved
This word when applied by the Railroad Engineer to the Contractor's drawings or as to suitability of materials means the Railroad Engineer has not observed any statement or feature that appears to deviate from the specifications' requirements. The Contractor shall retain the entire responsibility for compliance with all the specifications' requirements.

Special Provisions
Added details to these specifications which describes the special requirements related to a particular project.

Acceptance
Written notification from the Railroad Engineer that materials and construction satisfactorily complies with these specifications, special provisions and amendments thereto.

MATERIALS

Ties:
All ties shall be free from decay, large splits, large shakes, slanting grain, or large or numerous holes or knots, or other defects that may impair their strength or durability as cross ties.

Cross ties shall be a minimum 7 inches by 9 inches by 9 feet. All cross ties shall be branded with seller's symbol to indicate line end. Cross ties shall be spaced 19-1/2 inches center to center. The center of the ties shall coincide with centerline of the track and the ties shall be laid at right angles to the rail with the wide face up.

All ties shall be well sawn on all four sides and cut square at the end to the full dimensions specified. All ties shall be straight and opposite faces shall be true and parallel. All cross ties shall be full length specified and should have full body and full face, except a 1" wane may be acceptable. All ties shall be conditioned in conformance with AWPA Standard C6.

Wooden cross ties shall be manufactured from the following kinds of wood:

Red Oak	Elm	Red Gum
White Oak	True Hickory	Black Gum
Cypress	Hickory	Tupelo
Birch	Pecan	Magnolia
Maple	Southern Pine	

Cottonwood, Willow, Hackberry and Poplar are not acceptable.

All oaks and mixed hardwoods shall be of compact wood through the top fourth of the tie.

Rail:
For shoofly construction, the rail shall be new 136# RE rail and shall conform to Standard Drawing 0735 and to the AREMA Manual, Chapter 4, parts 1 & 2.

Rail ends shall be cut with a rail saw to a tolerance of 1/32 inch from square. All burrs shall be removed and ends made smooth. Torch cut rails will be rejected.

Tie Plates:
Tie plates shall be new and shall be 8"x14" double shouldered for 6 inch base rail in accordance with Standard Drawing 0441.

Track Spikes:
Track spikes shall be new 5/8" square, 6 inch long, of full section and length, with reinforced throat in accordance with Standard Drawing 0451.

Rail Anchors:
Rail anchors shall be new drive on, normally applied with anchor machine or sledge hammer and furnished in accordance with Standard Drawing 0457.

Ballast:
Base material for ballast is available at Granite Mountain, AR and Georgetown, TX. Ballast shall consist of crushed stone with angular fragments resulting from crushing by mechanical means. No crushed gravel shall be allowed in ballast rock.

Ballast shall contain no carbonates and shall have hard, strong, angular, durable particles, free from injurious amounts of deleterious substances and conforming to the gradation requirements on Standard Drawing 0010.

Shipments of ballast not conforming to these specifications shall be rejected at the Contractor's expense.

CONSTRUCTION

General:
It is the intent of these specifications that the Contractor shall furnish an installation that is satisfactory to the Railroad in every respect. Final acceptance of the shoofly and main line

track work is subject to the approval by appropriate Railroad representatives. The Contractor must comply with regulations, stipulated in Rules Governing Public Agency Contractors working on Union Pacific property.

Roadbed:
The roadbed section shall conform to Standard Drawing 0001. The Contractor shall construct subgrade to within one tenth (0.10) foot of the design grade. No track materials shall be placed on the roadbed until the subgrade has been constructed and finished to the grades as defined by the contract drawings and approved by the Railroad representative.

Cross Ties:
Cross ties shall be placed square to the line of rails and shall be spaced in accordance with Standard Drawing 0220.

Ties must be handled with care and not damaged by puncturing with pick, shovel or other tool. They shall be installed with the heart side down. Unnecessary alterations to ties after treatment may be grounds for rejection of the tie.

Tie Plates:
Tie plates shall be placed under each rail at every tie. The plates shall be positioned so that the batter of plate will cant the rail to the gage side. The plates shall be centered on the tie and applied to obtain proper rail bearing.

Rail:
The standard gage of track is 4'- 8 ½" measured between heads of rails at right angles, measured in a plane 5/8" below top of rail.

When laying rail, the line rail is the outer rail on curves and shall first be spiked to line. The gage rail shall then be spiked to proper gage. The track shall be gaged at least at every third tie.

Rail shall be handled carefully during loading and unloading. Care must be taken not to allow rails to strike together or to be placed upon any material which might bend or damage them. Nicked or gouged rail shall be rejected by the Railroad Engineer.

The bottom of the rail, and all bearing surfaces of rail, ties and tie plates, shall be broom cleaned before rail is laid. Rails must be brought squarely together before spiking. Rails must not be driven into position, but shall be moved with rail tongs, lining bars or crane.

Spiking:
Spikes shall be placed so there will be not less than 2" from the center of the spike to the edge of the tie. The number of spikes per tie plate shall be per Standard Drawing 0453.

Spikes shall be started and driven vertically, square with and snug against the rail to a full bearing on the base of the rail. If they are bent during driving, they shall be withdrawn and replaced with new spikes. The last few blows shall be given lightly, so as not to bend or break the spike or the spike head. Care shall be taken not to strike the rail when driving spikes. When spiking, care shall be taken to see that the shoulder of the tie plate has full bearing against the base of rail.

Rail Anchors:
In applying rail anchors, they shall be set with full bearing against the side of the tie. Care shall be taken to avoid overdriving, as this may fracture or spread the metal, resulting in a loss of holding power. Any rail anchor that is fractured or with metal spread will be rejected.

Ballast:
When ballast is delivered in Railroad cars, the track shall be capable of supporting the cars without damaging the rail or the subgrade.

The ballast shall be placed to provide a depth under the tie as required by Standard Drawing 0001.

The ballast shall be thoroughly tamped for a distance of not less than 13" from each side of the base of rail along both sides of the tie. In tamping ties within the above described limits, simultaneous tamping shall be performed under each rail. Tamping is not permitted at the center of the tie. Pneumatic or electric tamping tools, either hand held or machine mounted, shall be used. Hand tamping with shovels or picks will not be permitted.

Two tamping tools shall always be used opposite each other on the same tie. Tampers shall be started from a nearly vertical position and worked downward past the bottom of the tie, after which the tool shall be slanted inward to force ballast under the tie. All ties shall be tamped uniformly. Ties found to be improperly tamped shall be retamped.

After the track has been raised, lined and surfaced, the ballast shall be dressed to conform to the sections shown on Standard Drawing 0001 and the Contract Drawings.

Care shall be taken when handling ballast to prevent contamination by dirt or other materials. Contaminated ballast shall be removed and replaced with clean ballast at the Contractor's expense.

Alignment and Surface:
The track shall be constructed to the alignment and grade as shown in the Contract Plans, and shall conform to center line and top of rail stakes set at not more than 50 foot intervals. Deviation from established gage and cross level shall not exceed 1/8"; deviation from profile grade and horizontal alignment shall not exceed 1/8" in 50 feet. All work shall be acceptable to the Railroad Engineer.
Tangent track shall be cross level and superelevation shall be provided on curved track sections as shown in the Contract Plans. The inside rail on a curve shall be maintained at the prescribed grade

and the proper superelevation shall be provided by raising the outer rail.

No humps or sags in the surface will be accepted, nor will irregularities in alignment, either on tangent or curved track be accepted, that exceed the deviations described above.

RAIL WELDING (FIELD WELDING)

Sections of Continuous Welded Rail (CWR) laid in tracks shall be joined together by field welding. All field welding shall be performed by an approved process using preformed, factory-made molds. Alignment, support, and clamping of rails shall be so arranged as to produce welds conforming to the specified tolerances.

The Contractor shall prepare for the Railroad Engineer's approval, a detailed procedure specification covering the step by step procedures to be employed in making the field welds. A complete description of each of the following items and any other essential characteristics shall be included in the procedure specification:

a) Manufacturer's trade name for the welding process.
b) Method to be used for cutting and cleaning of the rail ends.
c) Minimum and maximum spacing between rail ends.
d) Method to be used for maintaining the rails in alignment during welding.
e) Method to be used for preheating including time and temperature.
f) Tapping procedure including the minimum time required to cool the weld under the mold insulation.
g) Method to be used, including a description of special tools and equipment for removing the gates and risers and finishing the weld to the final contour.

The Contractor shall designate the field welding process that he intends to use in track construction. The step by step method of welding used shall be performed in strict accordance with the welding procedure specifications.

The Contractor shall prepare two full scale welds in rail of the same nominal weight to be welded in the track construction. One of the qualification welds shall be subject to the slow bend test as outlined in AREA Bulletin 598, Page 434, February 1966, and the other weld shall be longitudinally cross sectioned, macroetched and Brinell hardness tested.

The slow bend specimen shall have a minimum modulus of rupture of at least 100,000 pounds per square inch and a deflection of not less than 3/4 inch. The macroetched section shall show no evidence of cracks, lack of fusion or incomplete weld penetration. The total area of internal defects such as porosity and slag inclusions shall not exceed 0.60 square inch and the largest single porosity or slag defect shall not exceed 1/8" in diameter.

The Brinell hardness of the weld measured on the head of the rail in the center of the weld shall be equal to the hardness of the adjoining rail plus or minus 20 Brinell hardness numbers.
Six copies of the welding procedure qualification test records shall be submitted to the Engineer.

Prior to beginning track welding, each crew of welders, including the welding foreman or supervisor for that crew, shall prepare and make a qualification weld. The welding shall be done in accordance with the approved procedure specification and will be witnessed by the Railroad Engineer. The qualification weld shall be ultrasonically inspected and meet the Brinell hardness requirements provided herein.

A test record shall be kept and contain the names of the welders and welding foreman or supervisor who made the test weld and briefly describe their specific duties. It shall also show the results of the ultrasonic and hardness tests.

The Railroad Engineer reserves the right to require a requalification, at the Contractor's expense, of any crew of welders whose work fails to meet the specified requirements.

All welding shall be performed under the direct supervision of an experienced welding foreman or supervisor. In addition, a manufacturer's representative, experienced in field welding, shall be present at the job site and shall witness a sufficient number of welds to assure that the proper procedure is understood by Contractor's personnel. All rewelds shall be cut out with a rail saw only. No cutting with a torch will be allowed.

The ends of the rails to be welded shall be cleaned to remove all grease, oil, dirt, loose scale, and moisture. The cleaned area shall extend at least six inches back from the rail ends and shall include all the rail surfaces. The faces of the rail ends shall be arranged at right angles by cutting or grinding and shall be further cleaned to remove all scale and rust.

The ends of the rails to be welded shall be properly gapped and aligned to produce a weld which will conform to the alignment tolerances described above.

There shall be no holes within nine inches from the ends of the rail to be welded.

The rail ends shall be preheated prior to welding to at least the temperature designated by the welding manufacturer and for a sufficient time to ensure full fusion of the weld metal to the rail ends without cracking of the rail or weld.

The molds shall be left in place after tapping for sufficient time to permit complete solidification of the molten metal and proper slow cooling to prevent cracking and provide a complete weld with the proper hardness and ductility.

The completed weld shall be finished by mechanically controlled grinding.

Each completed weld shall have full penetration and complete fusion and be entirely free of cracks. The total area of internal defects, such as porosity and slag inclusions, shall not exceed 0.060 square inch. The largest single porosity or slag defect permitted shall not exceed 1/8 inch in diameter.

The hardness of the weld measured on the head of the rail in the center of the weld shall be equal to the Brinell hardness of the parent metal with a tolerance of plus or minus 20 Brinell hardness number.

Field welding record shall be provided by the Contractor. The field welding record shall be continuously maintained to record details of field welding as follows:

(a) Date and time.
(b) Location by engineer's station, stating track and rail.
(c) Contractor's foreman.
(d) Engineer's representative.
(e) Manufacturer's representative.
(f) Weather, air and rail temperatures.
(g) Weld trade name.
(h) Track condition and anchorage.

All weld testing shall be carried out by and at the expense of the Contractor and shall be witnessed by the Railroad Engineer. Welds shall be tested ultrasonically as follows:

a) Ultrasonic inspection of the weld shall be performed using the pulse echo technique. Inspection shall be accomplished by contact method using angle beam transducers at 45° and 70° to locate lack of bond, slag inclusions, voids, cracks, and gas pockets. Search may be conducted from the top surface of the head of the rail. The scan is to be conducted in both longitudinal directions of the rail to completely sweep the head, web and base area of the rail

b) Transducers shall have active elements of at least ½" x ½" and no longer than 3/4" x 3/4". The test frequency shall be 2.25 MHZ.

c) Test equipment shall be calibrated to give a full screen indication from a 1/8" flat bottom hole at 8 3/4" using a 45° transducer. The flat bottom hole must be perpendicular to the sound beam.

d) A defect reflection of 50% of screen from the base area or lower half of web may be cause for rejection. A 90% of screen signal from the upper half of the web or the head and web area is rejectable.

e) The test equipment shall be calibrated to give a 60% above base line indication from a 1/8" flat bottom hole, using the 70° transducer at 3". A defect reflection of 60% of screen or greater shall be cause for rejection.

f) Light scattered porosity is acceptable. Concentrations, where four or more returns in one group or more than one group occur in the same area, are causes for rejection.

g) The person making the ultrasonic test of weld must be capable of establishing the transducer sound beam exit point, actual angle of transducer and demonstrate the ability to accurately calibrate an Ultrasonic Reflectoscope. Deviation from the stated angle must be indicated on the report.

CWR shall be adjusted to be free of longitudinal stresses.

Field weld shall be marked in weatherproof paint on the field side web. Information displayed shall include the date of welding, air temperature (A.T.), the rail temperature (R.T.), and the welder's initials.

RULES GOVERNING PUBLIC AGENCY CONTRACTORS WORKING ON UNION PACIFIC PROPERTY

Safety is of the first importance in the discharge of duty. Obedience to the rules is essential to safety.

Any unusual condition which may affect the safe and efficient operation of the Railroad must be reported by the first means of communication.

The use of alcoholic beverages or intoxicants by Contractor's employees subject to duty, or their possession, use or being under the influence thereof while on duty or on Company property, is prohibited.

They shall not report for duty under the influence of, or use while on duty or on Company property any drug, medication or other substance, including those prescribed by a doctor, that will in any way adversely affect their alertness, coordination, reaction, response or safety.

The Contractor's employees must exercise care to prevent injury to themselves or others. They must be alert and attentive at all times when performing their duties and plan their work to avoid injury.

The Contractor's employees must expect the movement of trains, engines, cars or other movable equipment at any time, on any track, in either direction. They must not assume that a train may not come before any certain time, nor act under the assurance of any person to that effect, but must at all times protect themselves by remaining alert and comply with instructions from Railroad's representative. They must not stand on the track in front of an approaching engine, car or other moving equipment, or within 500 feet behind.

When working within 25 feet of the nearest rail of any track, the Contractor's foreman or employee-in-charge of work must arrange with Railroad's authorized representative for proper protection. No work may be performed, nor any piece of equipment nor part of equipment may be moved to within 25 feet of the nearest rail of any track until the Railroad's authorized representative has been notified, made arrangements for necessary flag protection required by Railroad's own rules, and has notified the Contractor's foreman or employee-in-charge of work that work can proceed. Failure to comply will result in Railroad's removing the contractor, his employee, and/or his

machinery from Railroad's property.

When work is required which is more than 25 feet away from the nearest rail of any track, the Contractor's foreman or employee-in-charge of work must notify Railroad's authorized representative, advising him of location, starting and stopping times, scope of work to be performed and forces involved.

The Contractor is solely responsible for restoring Railroad's property to the previous condition, making repairs to fences, gates, or buildings damaged, or removed, or any other facilities or structures by the Contractor or his forces. The Contractor will be responsible for keeping drainage open and unhindered.

Ditching, cutting, gouging, or any other means of disturbing the side slope of Railroad's embankment is prohibited.

Any work within 25 feet of the nearest rail must be stopped, with equipment in the clear, when trains are approaching. All employees must stand back at least 30 feet from the tracks. If a 30 foot distance is not possible, workers must clear the tracks as far as possible.

Delay to train traffic must be avoided. Work must be so arranged that track will be made passable for trains when due.

The Contractor's employees must be careful to observe and obey warning and other posted signs.

In case of doubt or uncertainty, the safe course must be taken.

Electric wires must be considered live at all times. Employees must not depend for their safety on the insulation of wires. Those noticing dangling or sagging wires must provide protection

to insure the safety of themselves and others and must promptly notify their supervisor and Railroad's authorized representative.

All persons must look in both directions before crossing any track or roadway. Crossing tracks with equipment at locations other than at public or private road crossings is prohibited unless authorized by the Railroad's authorized representative.

When walking around the ends of standing cars or engines, the Contractor's employees must allow not less than 25 feet clearance, increasing this distance as necessary when moving equipment is involved. When walking between cars or engines on the same track, it must definitely be known that the equipment will not be moved or that there is at least 50 feet between cars or engines.

The Contractor's employees are prohibited from crossing the tracks by going underneath or in between cars or engines.

The Contractor's employees must not cross the tracks by crossing over the drawbar of cars and/or engines coupled together.

The Contractor's employees must not step on rails, frogs or switches and must watch their footing to avoid falling, slipping or tripping.

The Contractor's employees must not walk or stand between rails of tracks or permit portions of their bodies to foul tracks.

The Contractor's employees must be alert when engine or cars are passing on adjacent tracks, and must keep a sufficient distance from passing equipment to avoid the possibility of being struck by anything projecting or that may be falling or thrown therefrom.

Open fires or fires in barrels are not permitted on Railroad property.

SHOOFLY TRACK INSTALLATION

Description. This work consists of furnishing and installing the shoofly track to the limits shown on the Contract Drawings. Shoofly details shall comply with the Contract Drawings and the attached Union Pacific Railroad Standard Drawings. Shoofly track materials including ballast, track, ties, and other track hardware shall be new. Shoofly track material and construction requirements shall comply with the Special Provisions described herein. Temporary seeding and mulching of embankment slopes and continuous welded rail field welds shall be incidental to SHOOFLY TRACK INSTALLATION. Field welds for the continuous welded rail shall comply with the specifications provided herein.

Method of Measurement. Track shall be measured in feet along the centerline of the track. Each track shall consist of two rails.

Basis of Payment. This work will be paid for at the contract unit price per foot of SHOOFLY TRACK INSTALLATION, which price shall be payment for furnishing and installing the shoofly trackwork to the limits shown on the Contract Drawings and as described herein.

REMOVE SHOOFLY TRACK

Description. Shoofly trackwork shall be removed as shown on the plans or as required by the Engineer. This item includes all track elements such as rail, tie plates, rail anchors, spikes and ties. This work also includes the removal of ballast and sub-ballast. This work shall be performed in a manner approved by the Union Pacific Railroad. The salvage value of the track materials shall be reflected in the unit bid for the item REMOVE SHOOFLY TRACK. Rail cutting to remove shoofly trackwork shall be incidental to this bid item.

Method of Measurement. Track shall be measured in feet along the centerline of the track. Each track shall consist of two rails.

Basis of Payment. This work will be paid for at the contract unit price per foot for REMOVE SHOOFLY TRACK, which price shall be payment in full for all labor, materials, and equipment necessary to complete the work described herein.

REMOVE MAINLINE TRACKWORK

Description. All existing track which interferes with the construction of the proposed bridge abutments and superstructure shall be removed. This item includes the removal of all track elements such as rail, tie plates, rail anchors, spikes and ties. This work shall be performed in a manner approved by the Union Pacific Railroad. Existing rail and tie plates are to be retained for reuse over the new bridge. The salvage value of the track materials shall be reflected in the lump sum price bid for REMOVE MAINLINE TRACKWORK. Rail cutting to remove the mainline track shall be incidental to this bid item.

Method of Measurement. REMOVE MAINLINE TRACKWORK will be measured as a unit acceptably completed as shown on the plans and as specified.

Basis of Payment. REMOVE MAINLINE TRACKWORK will be paid for at the contract lump sum price bid, as specified and detailed, which price will include payment in full for all labor, materials, and equipment necessary to complete the work described herein.

INSTALL TRACKWORK ON NEW BRIDGE AND APPROACH

Description. This item of work consists of the installation of rail, cross ties, tie plates, rail anchors, spikes and inner guard rail. Final tracks over the new bridge are to constructed with the existing welded rail and tie plates. New main track cross ties, rail anchors, spikes, ballast and inner guard rail are to be installed. This work also includes the installation of new sub-ballast, ballast, ties, and other track materials from the rail cut locations to the approach aprons. Continuous welded rail field welds shall be incidental to INSTALL TRACKWORK ON NEW BRIDGE AND APPROACH. Mainline track materials and construction requirements shall comply with the Special Provisions provided herein.

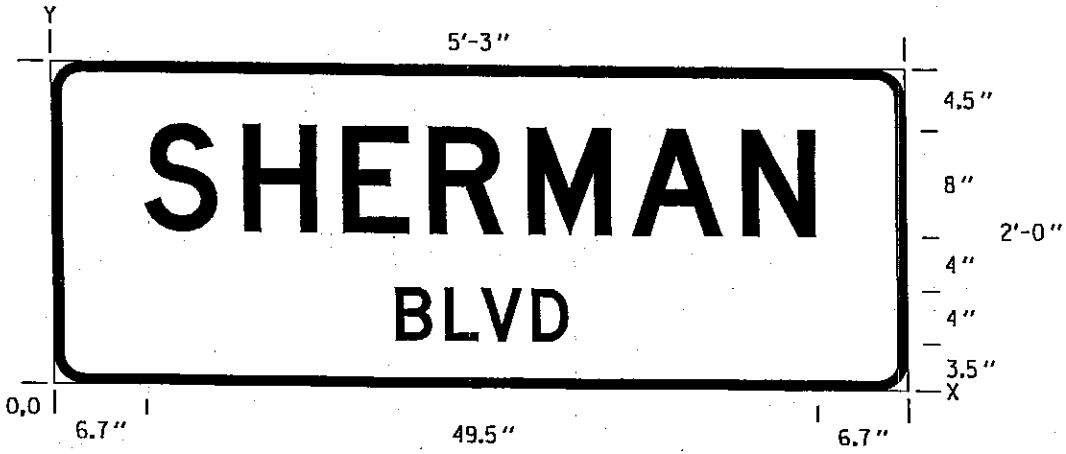
Field welds for the continuous welded rail shall comply with the specifications provided herein.

Method of Measurement. INSTALL TRACKWORK ON NEW BRIDGE AND APPROACH shall be measured as a unit acceptably completed as shown on the plans and as specified.

Basis of Payment. INSTALL TRACKWORK ON NEW BRIDGE AND APPROACH will be paid for at the contract lump sum price bid, as specified and detailed, which price shall be payment to install trackwork as shown on the Contract Plans and described herein.

SIGN DETAIL

SCALE 1:15



SIGN NUMBER	ESIGN004
WIDTH x HEIGHT	5'-3" x 2'-0"
BORDER WIDTH	0.8"
CORNER RADIUS	2.3"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE

SYMBOL	X	Y	WID	HT

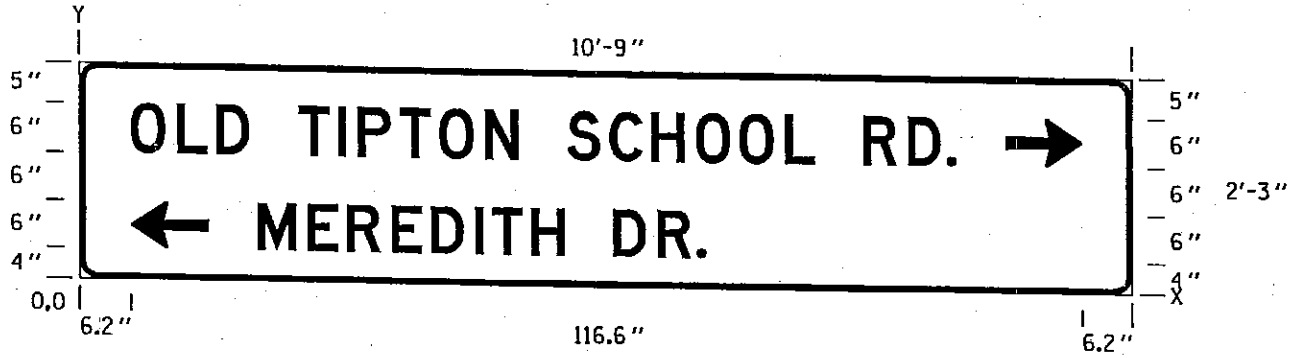
DIMENSIONS IN INCHES

COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)																						HT LEN
11.5 D	S	H	E	R	M	A	N																8.0
	6.7	14.0	21.3	27.7	35.0	42.7	50.9																49.5
3.5 D	B	L	V	D																			4.0
	25.1	28.8	31.5	35.2																			12.8

SIGN DETAIL

SCALE 1:25



SIGN NUMBER	ESIGN004
WIDTH x HEIGHT	10'-9" x 2'-3"
BORDER WIDTH	0.8"
CORNER RADIUS	2.3"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE

SYMBOL	X	Y	WID	HT
ARLONG	113.4	16.0	9.5	6.0
ARLONG,180deg	6.2	4.0	9.5	6.0

DIMENSIONS IN INCHES

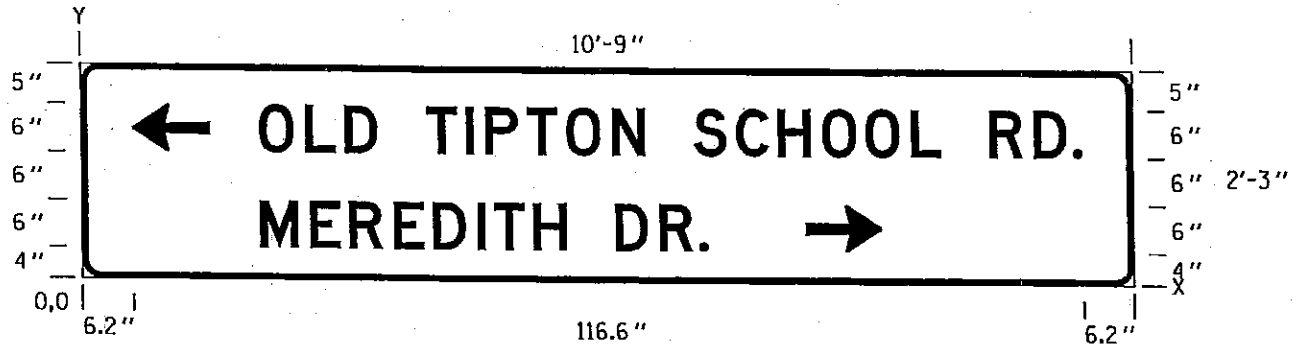
COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)																						HT LEN
16.0 D	O	L	D	T	I	P	T	O	N	S	C	H	O	O	L	R	D	.					6.0
	6.2	11.8	16.6	26.7	31.4	33.8	39.0	43.8	49.4	59.5	64.6	69.8	75.3	80.6	86.3	95.9	101.4	106.2					101.2
4.0 D	M	E	R	E	D	I	T	H	D	R	.												6.0
	21.6	27.7	32.5	37.9	42.7	48.2	50.3	55.1	65.1	70.6	75.3												54.9

4/3

SIGN DETAIL

SCALE 1:25



SIGN NUMBER	ESIGN004
WIDTH x HEIGHT	10'-9" x 2'-3"
BORDER WIDTH	0.8"
CORNER RADIUS	2.3"
MOUNTING	OVERHEAD
BACKGROUND	TYPE: REFLECTIVE
	COLOR: GREEN
LEGEND/BORDER	TYPE: REFLECTIVE
	COLOR: WHITE

SYMBOL	X	Y	WID	HT
ARLONG	88.5	4.0	9.5	6.0
ARLONG,180deg	6.2	16.0	9.5	6.0

DIMENSIONS IN INCHES

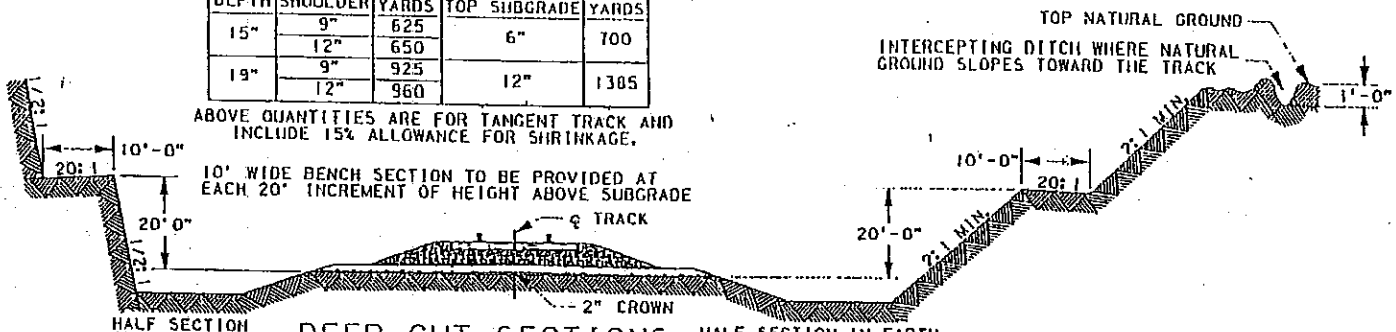
COORDINATES ARE TO LOWER LEFT CORNERS

Y FONT	LETTER POSITIONS (X)																						HT LEN
16.0 D	O	L	D	T	I	P	T	O	N	S	C	H	O	O	L	R	D	.					6.0
	21.6	27.3	32.1	42.1	46.9	49.3	54.4	59.2	64.9	74.9	80.1	85.3	90.7	96.1	101.7	111.4	116.8	121.6					101.2
4.0 D	M	E	R	E	D	I	T	H	D	R	.												6.0
	21.6	27.7	32.5	37.9	42.7	48.2	50.3	55.1	65.1	70.6	75.3												54.9

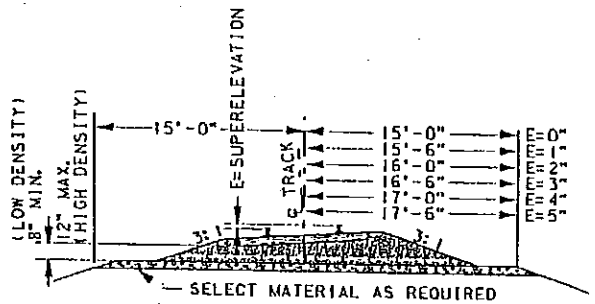
44

MATERIAL REQUIRED FOR 1000 FEET OF SINGLE TRACK				
BALLAST			SELECTED MATERIAL	
DEPTH	SHOULDER	CUBIC YARDS	DEPTH ABOVE TOP SUBGRADE	CUBIC YARDS
15"	9"	625	6"	700
	12"	650		
19"	9"	925	12"	1385
	12"	960		

ABOVE QUANTITIES ARE FOR TANGENT TRACK AND INCLUDE 15% ALLOWANCE FOR SHRINKAGE.

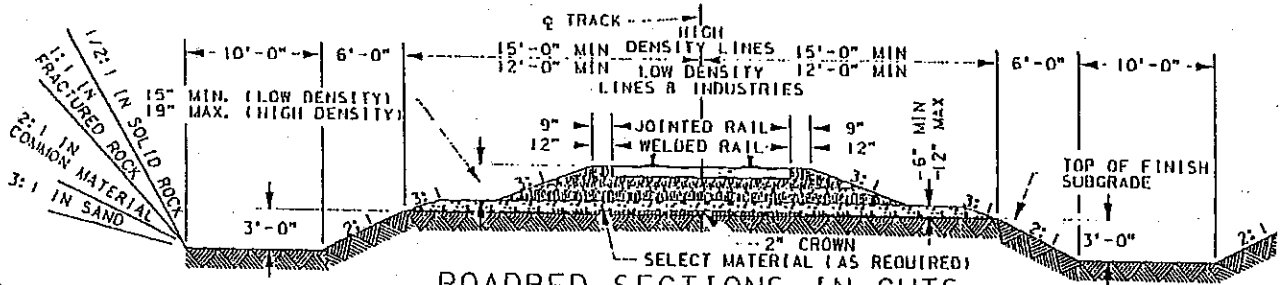


DEEP CUT SECTIONS

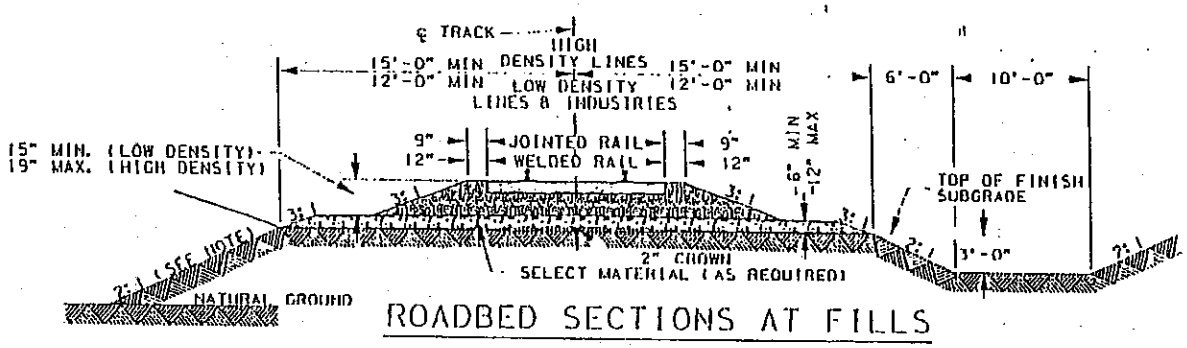


ROADBED SECTION AT CURVED TRACK

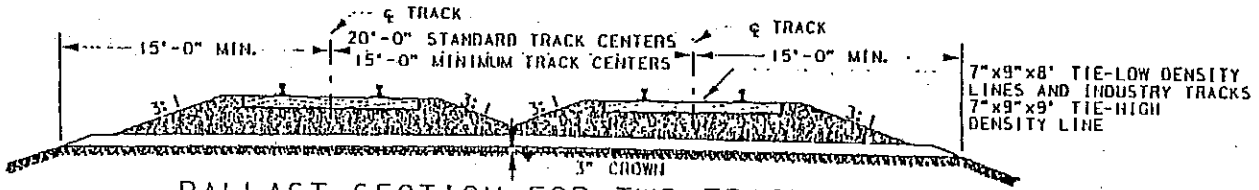
FOR DETAILS NOT SHOWN, SEE CUT AND FILL SECTIONS ELSEWHERE ON THIS SHEET



ROADBED SECTIONS IN CUTS



ROADBED SECTIONS AT FILLS



BALLAST SECTION FOR TWO TRACKS

NOTES:

THE DEPTH OF BALLAST AND DEPTH OF SELECTED MATERIAL SHALL BE DECIDED ON THE BASIS OF VOLUME OF TRAFFIC AND THE QUALITY OF SELECTED MATERIAL AND SUBGRADE DETERMINED BY THE RAILROAD'S ENGINEER SUBJECT TO THE APPROVAL OF THE CHIEF ENGINEER.

SLOPES SHOWN FOR BANKS IN CUTS AND ON FILLS SHALL BE CONSIDERED STANDARD AND GENERALLY USED, BUT MAY BE MODIFIED AS REQUIRED BY LOCAL CONDITIONS AND CHARACTER OF MATERIAL.

BALLAST MUST BE EQUALIZED IN ADVANCE OF DRESSING SO THAT FINAL SECTION WILL CONFORM TO SLOPE REQUIREMENTS AND CHARACTER OF MATERIAL.

WHERE OFF-TRACK ROADWAY IS TO BE PROVIDED, ADD 8'-0" ADDITIONAL WIDTH TO THE ROADBED SECTION AT TOP OF SUBGRADE ELEVATION.

ALL FILL SLOPES SHALL BE FACED WITH COVER OF MATERIAL SUITABLE FOR GROWING GRASS AND HAVING A THICKNESS OF APPROXIMATELY 6 INCHES. THE OUTER SURFACE OF THIS COVER SHALL COINCIDE WITH THE DESIGN SLOPE OF THE EMBANKMENT. MATERIAL FOR THIS COVER MAY BE OBTAINED FROM STRIPPING.

FLOW LINE ON 0.2% MINIMUM GRADE DITCHES AND BENCHES.

FLAT BOTTOM DITCHES ARE REQUIRED FOR HIGH DENSITY LINES, HOWEVER A "V" DITCH IS ACCEPTABLE FOR INDUSTRY TRACKS WHEN RIGHT-OF-WAY IS LIMITED AND WHERE LOCAL CONDITIONS AND CHARACTER OF MATERIAL SO REQUIRE.

REF U.P. STD DWG PAGE 0001.

UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

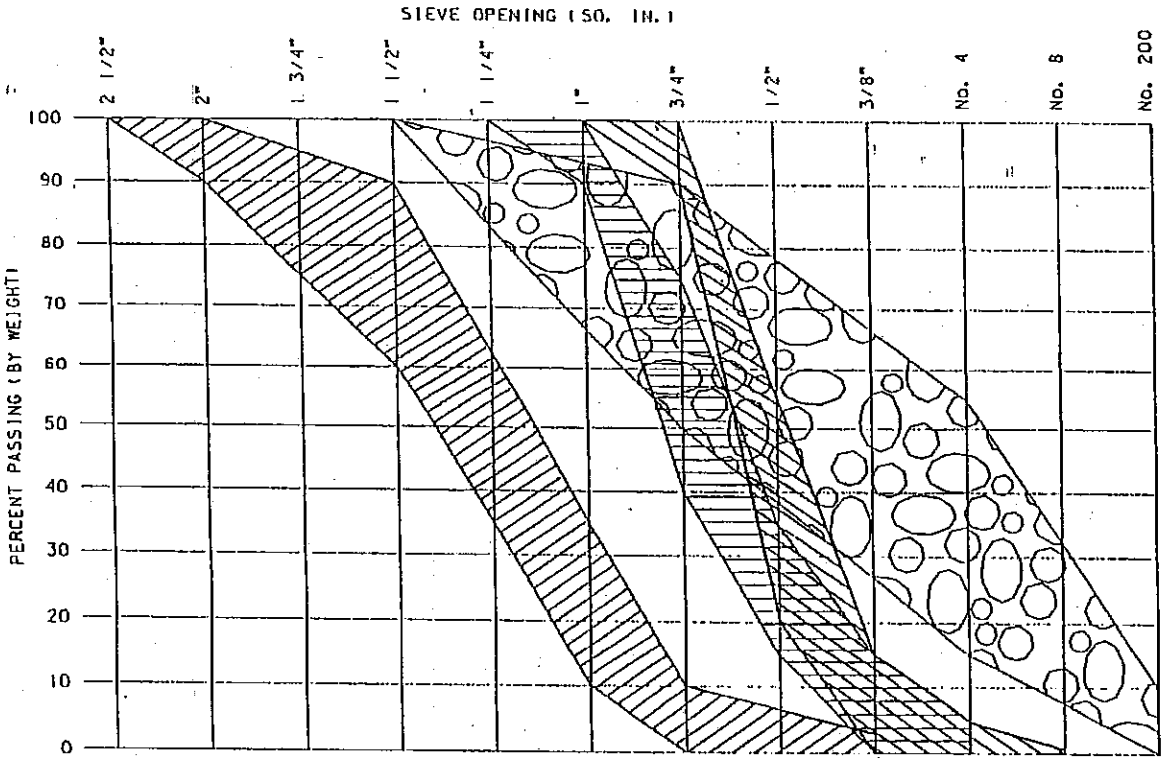
ROADBED SECTION FOR WOOD TIE TRACK CONSTRUCTION

UNION PACIFIC

ADOPTED: JAN. 21, 1927
REVISED: DEC. 31, 1996
FILE NO.: 0001

STD DWG 0001

STD DWG 1001



CLASS 1 BALLAST FOR MAIN TRACK (OLD "B")

CLASS 2 BALLAST FOR SECONDARY MAIN, BRANCH AND YARD TRACK (OLD "C")

CLASS 3 BALLAST IS SCREENINGS (SUBBALLAST AND WALKWAY)

BASE MATERIAL

NOTE: CLASS 1 AND CLASS 2 BALLAST MATERIALS ARE REQUIRED TO BE WASHED PRIOR TO LOADING.

	UP BALLAST CLASS			
	1	2	3	BASE MATERIAL
SQUARE OPENING	2"-3/4"	1"-3/8"	3/4"-0"	1 1/2"-0"
2 1/2"	100			
2"	90-100			
1 3/4"				
1 1/2"	60-90			100
1 1/4"		100		
1"	10-35	90-100	100	
3/4"	0-10	40-75	90-100	50-90
1/2"		15-35	20-55	
3/8"	0-3	0-15	0-10	
No. 4		0-5	0-5	25-55
No. 8			0-1	
No. 200	0-.5	0-.5	0-1	3-10

PERCENT PASSING (BY WEIGHT)

(ALL AGGREGATE SAMPLING AND TESTING PER ASTM LATEST REVISION.)

NOTES:
FOR STANDARD CROSS SECTIONS, SEE STD DWG 0001, OR STD DWG 0002.

BASE MATERIAL TO BE USED AS SUB BALLAST IN POOR NATIVE SOIL CONDITIONS WHERE SPECIFIED BY CHIEF ENGINEER.

BASE MATERIAL AVAILABLE AT GRANITE MOUNTAIN, AR AND GEORGETOWN, TX.

BALLAST CLASS	ITEM NO.
1	562-0766
2	562-1432
3	562-2098
BASE MATERIAL	562-5428

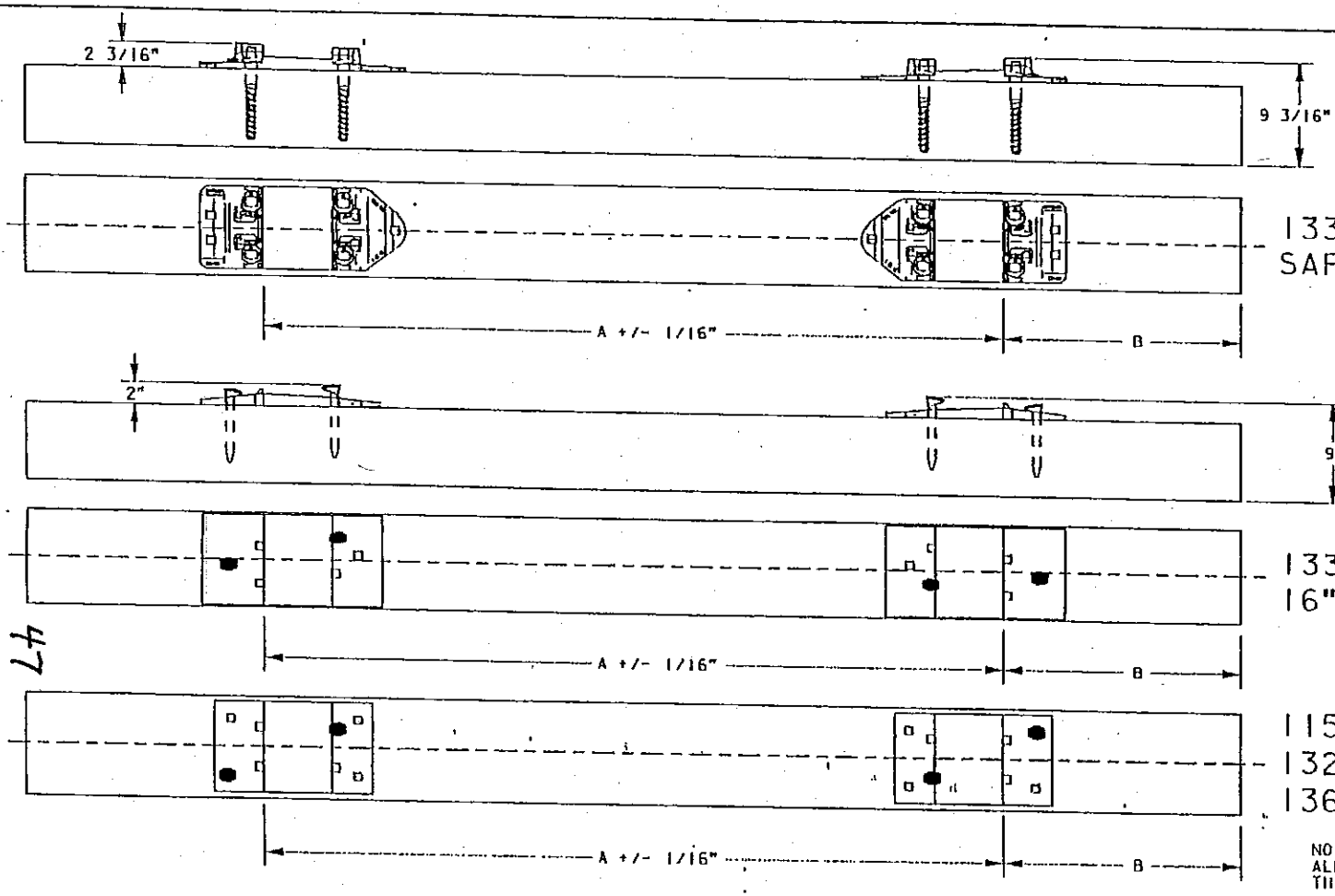
UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

BALLAST GRADATION TABLE

ADOPTED: DEC. 31, 1996
REVISED:
FILE NO.: 0010

STD DWG
0010

STD DWG
0010



SIZE ALL TIES 7" x 9"		RAIL CANT	TIE PLATE	A	B	ITEM NUMBER	
						HARDWOOD	SOFTWOOD
115 LB.	8'	1:40	13"	65"	1'-3 3/16"	502-9793	-
	9'				1'-9 3/16"	-	-
132 LB.	8'	1:40	14"	65 3/4"	1'-3 3/16"	-	-
	9'				1'-9 3/16"	-	-
133 LB.	8'	1:30	14"	65 3/4"	1'-3 3/16"	502-9795	502-9796
	9'		16"		1'-9 3/16"	502-9797	502-9798
133 LB.	9'	1:40	18" CAST SAFELOK	65 3/4"	1'-9 3/16"	502-9799	-
	10'				2'-2 3/16"	502-1020	-
136 LB.	8'	1:40	14"	65 3/4"	1'-3 3/16"	-	-
	9'				1'-9 3/16"	-	-

NOTES:
ALL HOLES SHALL EXTEND THE ENTIRE DEPTH OF THE TIE.

HOLE DIAMETERS WILL BE 7/16" FOR SOFTWOOD AND 1/2" FOR HARDWOOD TIES.

RAIL GAUGE SPIKES WILL HAVE 1" CLEARANCE BETWEEN RAIL SEAT AND UNDERSIDE OF SPIKE HEAD.

REFERENCE U. P. R. R. PREPLATE TIE SPEC.

UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

PREPLATING DIMENSIONS FOR 8' AND 9' WOOD TIES FOR 115, 132, 133 & 136 LB. RAIL

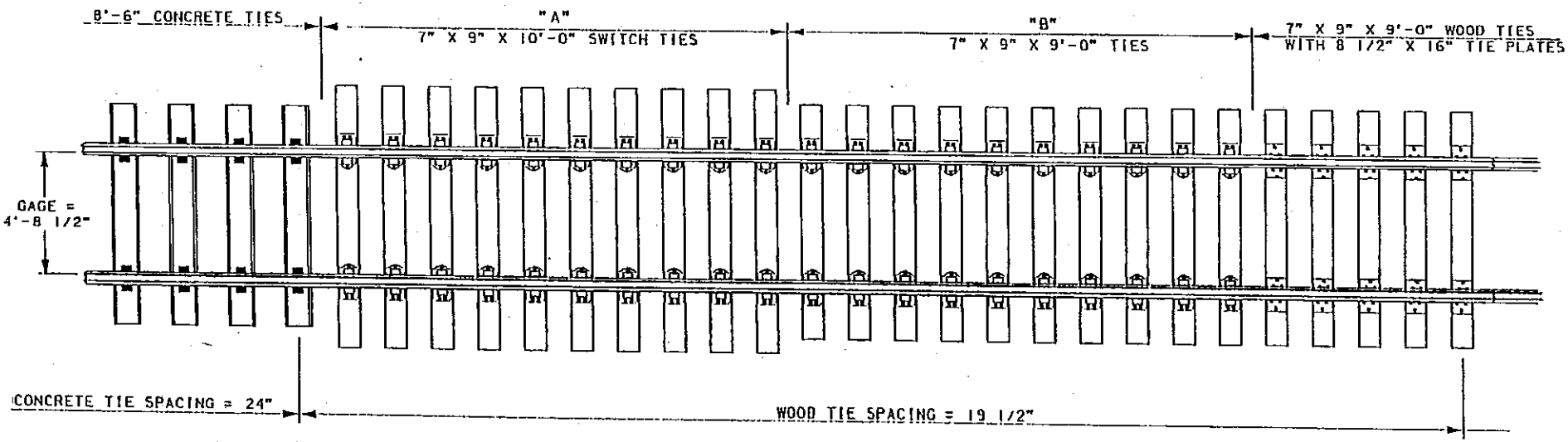
UNION PACIFIC

ADOPTED: DEC. 31, 1996
REVISED: FEB 25, 1997
FILE NO.: 0211

STD DWG
0211

STD DWG 0211

47



48

	TIE TYPE	MAXIMUM AUTHORIZED TRACK SPEED		
		UP TO 30 MPH	30 TO 50 MPH	MORE THAN 50 MPH
QTY REQ'D	"A"	0	10	20
	"B"	10	10	10

TIE TYPE REQUIRED

"A" - 7" X 9" X 10'-0" PREPLATED SWITCH TIE U.P. ITEM #502-1020
(4) SAFELOK CLIPS U.P. ITEM #503-5100

"B" - 7" X 9" X 9'-0" PREPLATED TIE U.P. ITEM #502-7999
(4) SAFELOK CLIPS U.P. ITEM #503-5100

NOTES:
TRANSITION ZONES ARE REQUIRED ON ALL MAIN TRACKS. TRANSITION ZONES ARE ALSO REQUIRED ON OTHER TRACKS WHERE MAXIMUM AUTHORIZED SPEED IS 20 MPH OR GREATER.

TRANSITION ZONES WILL BE INSTALLED UNDER THE FOLLOWING CONDITIONS:

TRANSITION ZONES SHOULD NOT BE INSTALLED WHERE CURVATURE OR OBSTRUCTIONS SUCH AS CROSSINGS EXISTS. INSTEAD, CONCRETE TIES SHOULD BE EXTENDED THROUGH THE OBSTRUCTION OR CURVE BEFORE INSTALLING TRANSITION ZONE.

FOR SAFELOK PLATE DETAILS, SEE STD DWG 0443
FOR SAFELOK CLIP DETAILS, SEE STD DWG 0409
FOR COACH SCREW DETAILS, SEE STD DWG 0450
FOR TIE PLATE DETAILS, SEE STD DWG 0441

UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

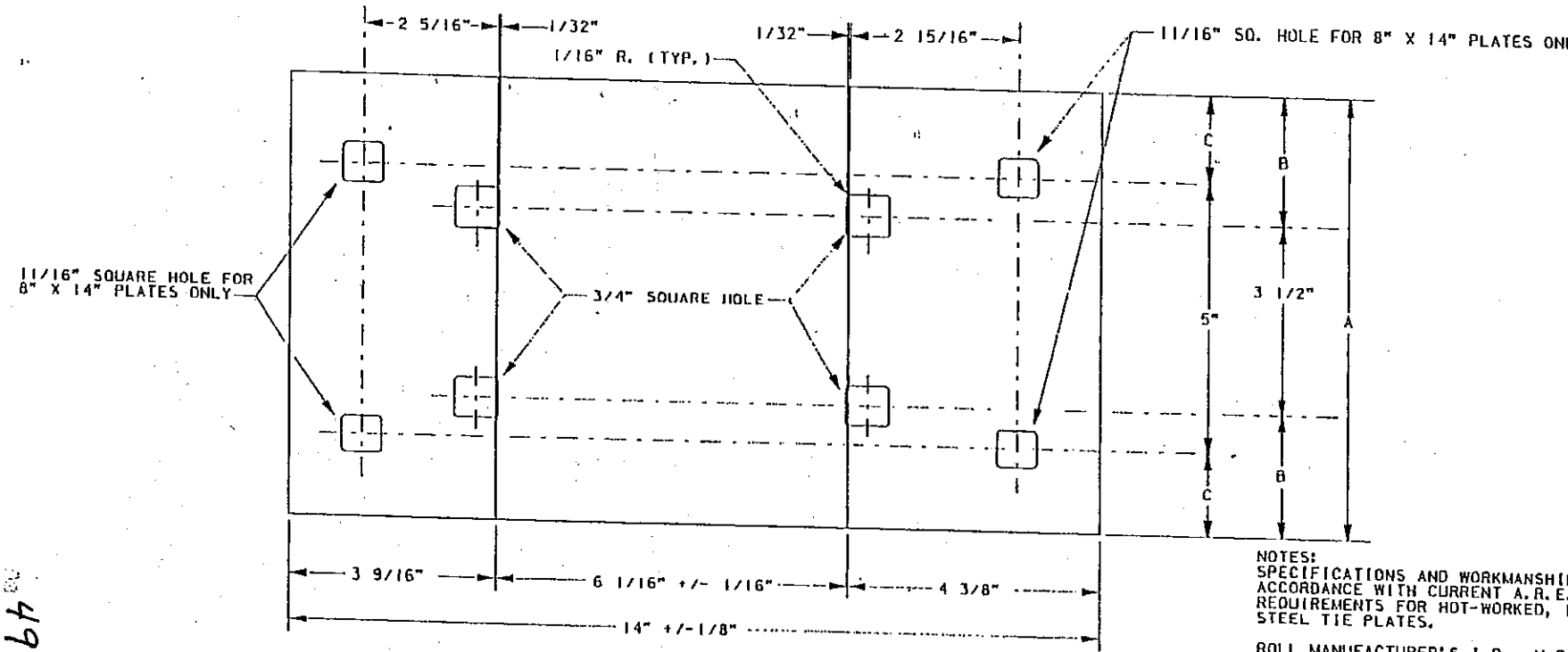
CONCRETE TIE TO WOOD TIE TRANSITION

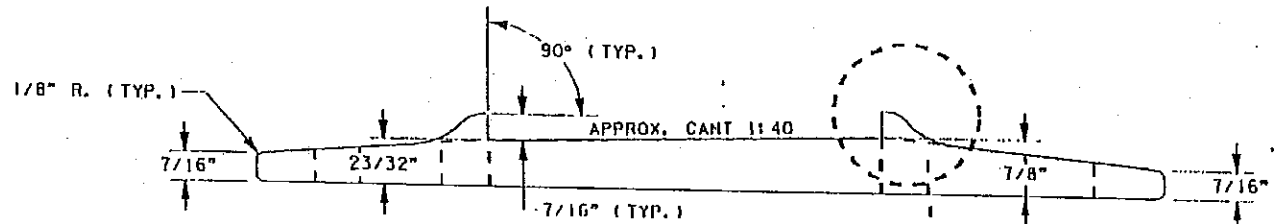
UNION PACIFIC

ADOPTED: JAN. 24, 1997
REVISED:
FILE NO.: 0220

STD DWG 0220

STD DWG 0220





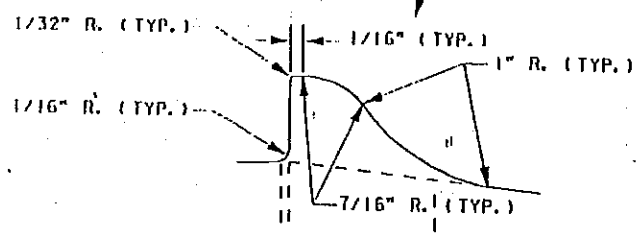


PLATE	U.P.	C.N.W.
ITEM NO.	554-4445	5543223
A	8"	7 3/4"
B	2 1/4"	2 1/8"
C	1 1/2"	1 3/8"

NOTES:
SPECIFICATIONS AND WORKMANSHIP TO BE IN ACCORDANCE WITH CURRENT A.R.E.A. MANUAL REQUIREMENTS FOR HOT-WORKED, HIGH CARBON STEEL TIE PLATES.

ROLL MANUFACTURER'S I.D., U.P., RAIL SECTION AND YEAR ROLLED ON TOP OF FIELD SIDE OF TIE PLATE.

ALL SPIKE HOLES TO BE 3/4" SQUARE UNLESS OTHERWISE NOTED

ESTIMATED FINISHED WEIGHT OF 8" X 14" PUNCHED PLATE = 22.19 LBS..

ESTIMATED FINISHED WEIGHT OF 7 3/4" X 14" PUNCHED PLATE = 21.50 LBS..

NET AREA OF 8" X 14" PLATE = 105.50 SQUARE INCHES.

NET AREA OF 7 3/4" X 14" PLATE = 104.01 SQUARE INCHES.

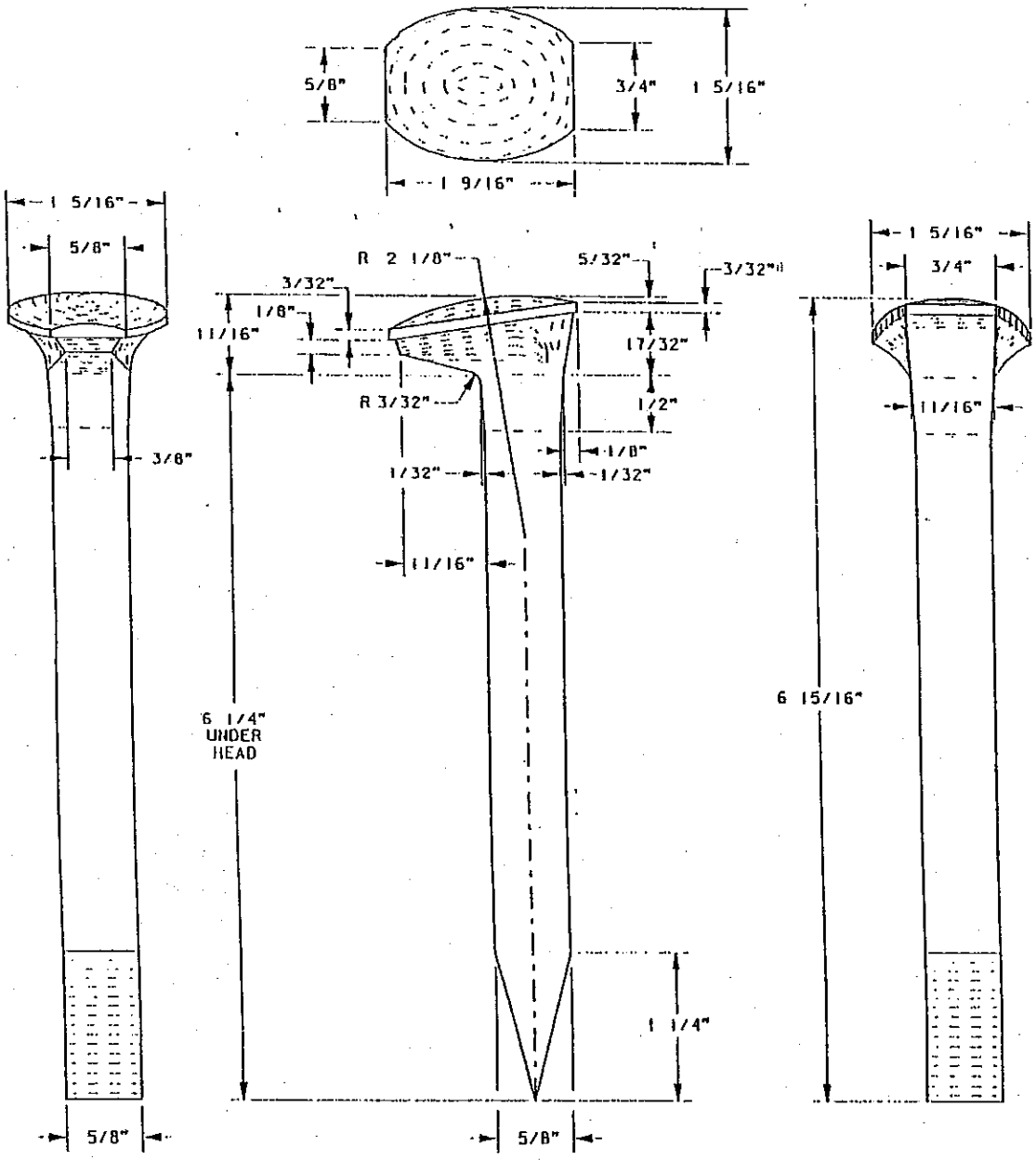
UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

DOUBLE SHOULDER TIE PLATE FOR 132 LB. AND 136 LB. RAIL

ADOPTED: DEC. 30, 1996
REVISED:
FILE NO.: 0441

STD DWG
0441

STD DWG
0441



NOTES:
MATERIAL AND WORKMANSHIP TO BE IN ACCORDANCE WITH CURRENT A.R.E.A. MANUAL REQUIREMENTS FOR HIGH CARBON STEEL TRACK SPIKES WITHOUT COPPER.

PERMISSIBLE SHANK STRAIGHTNESS VARIATION, MEASURED IN EITHER PLANE, SHALL NOT EXCEED 0.0313".

MANUFACTURER'S I.D. AND THE LETTERS "HC" SHALL BE PRESSED ON THE HEAD OF EACH SPIKE WHILE BEING FORMED.

WEIGHT = APPROXIMATELY 0.875 LBS. EACH.

INTENDED USE	ITEM NOS.	WT	SPIKES/KG
MAINTENANCE	550-6766	47	50
PROJECT	550-6707	200	220
0" SHIM SPIKE	550-6678	200	220

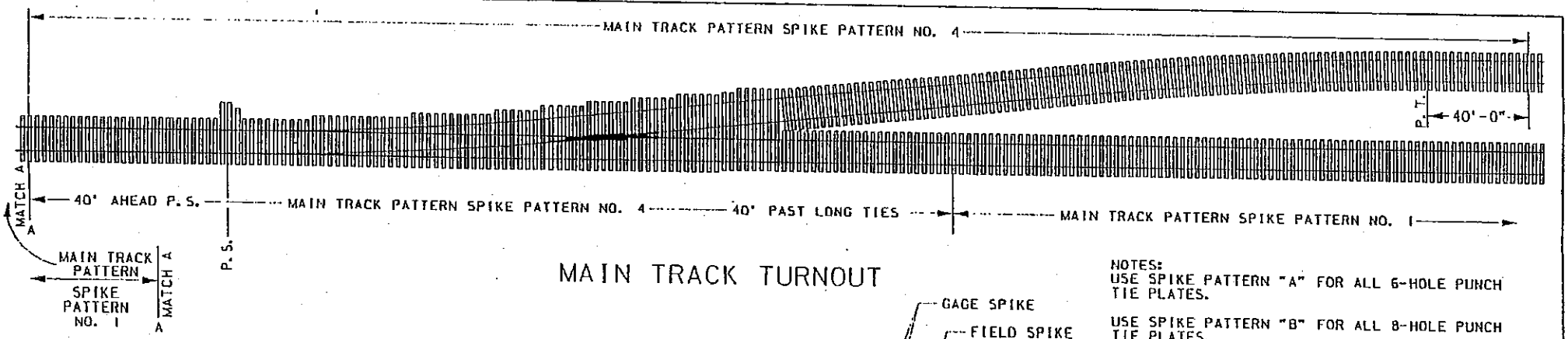
UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

CUT SPIKE FOR WOOD TIES

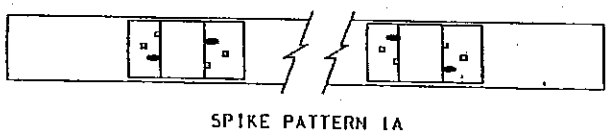
ADOPTED: DEC. 30, 1996
REVISED:
FILE NO.: 0451

STD DWG
0451

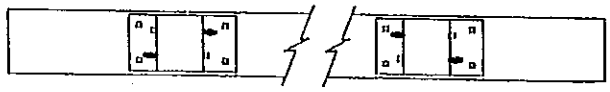
STD DWG
0451



MAIN TRACK TURNOUT

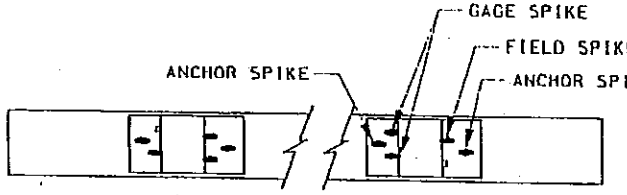


SPIKE PATTERN 1A

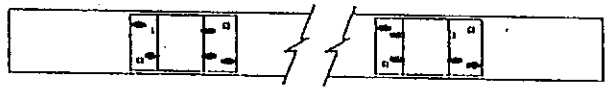


SPIKE PATTERN 1B

SPIKE PATTERN NO. 1

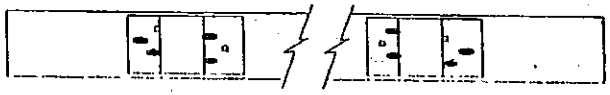


SPIKE PATTERN 3A

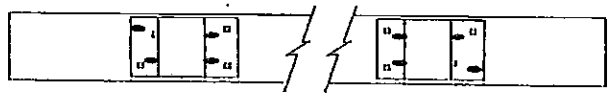


SPIKE PATTERN 3B

SPIKE PATTERN NO. 3

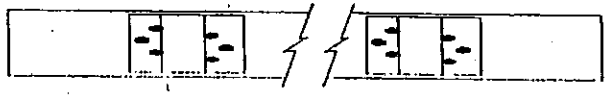


SPIKE PATTERN 2A

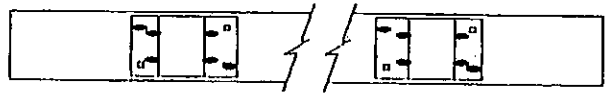


SPIKE PATTERN 2B

SPIKE PATTERN NO. 2



SPIKE PATTERN 4A



SPIKE PATTERN 4B

SPIKE PATTERN NO. 4

NOTES:
USE SPIKE PATTERN "A" FOR ALL 6-HOLE PUNCH TIE PLATES.

USE SPIKE PATTERN "B" FOR ALL 8-HOLE PUNCH TIE PLATES.

THE SPIKE PATTERNS SHOWN ARE FOR MAIN TRACKS, BRANCH LINE TRACKS, HEAVY TONNAGE SPURS, AND C.T.C. SIDINGS WITH 13" AND LONGER PLATES.

CHIEF ENGINEER WILL DETERMINE ANCHOR SPIKE PATTERN FOR ANY PLATES LESS THAN 13" LONG.

USE PATTERN 1A AND 1B ON TANGENT TRACK AND CURVES BELOW 1°30' FOR SPEEDS BELOW 40 MPH.

USE PATTERN 2A AND 2B:
1) ON TANGENT TRACK AND CURVES BELOW 1°30' FOR SPEEDS 40 MPH AND ABOVE.
2) ON CURVES 1°30' AND GREATER, BUT UNDER 4° FOR SPEEDS BELOW 40 MPH.
3) ON NON C.T.C. SIDINGS, YARD AND INDUSTRIAL TRACKS WITH CURVES OVER 4°00'.
4) ON ALL SIDINGS IN CTC & TWC TERRITORIES.

USE PATTERN 3A AND 3B:
1) ON CURVES 1°30' AND GREATER BUT UNDER 4° FOR SPEEDS ABOVE 40 MPH.
2) ON CURVES 4° AND GREATER, BUT UNDER 8° FOR SPEEDS BELOW 40 MPH.

USE PATTERN 4A AND 4B:
1) ON CURVES 4° AND GREATER, BUT UNDER 8° FOR SPEEDS ABOVE 40 MPH.
2) ON ALL CURVES 8° AND GREATER.
3) ON ALL MAIN TRACK TURNOUTS.

ANY SPIKING PATTERN OTHER THAN WHAT IS SHOWN ON THIS DRAWING ARE TO BE APPROVED BY THE CHIEF ENGINEER.

UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

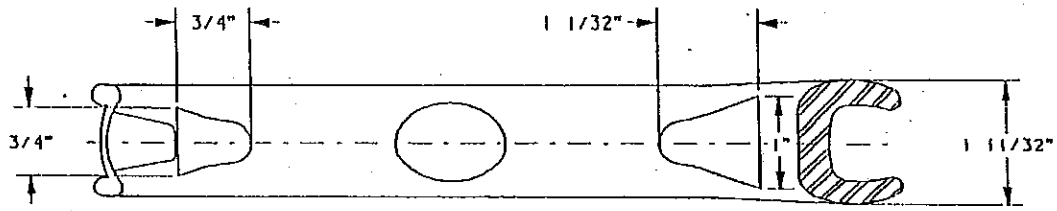
SPIKE PATTERN

UNION PACIFIC

ADOPTED: DEC. 31, 1996
REVISED:
FILE NO.: 0453

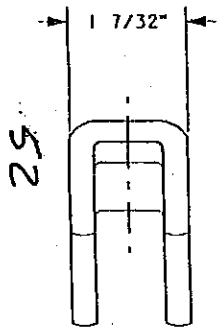
STD DWG
0453

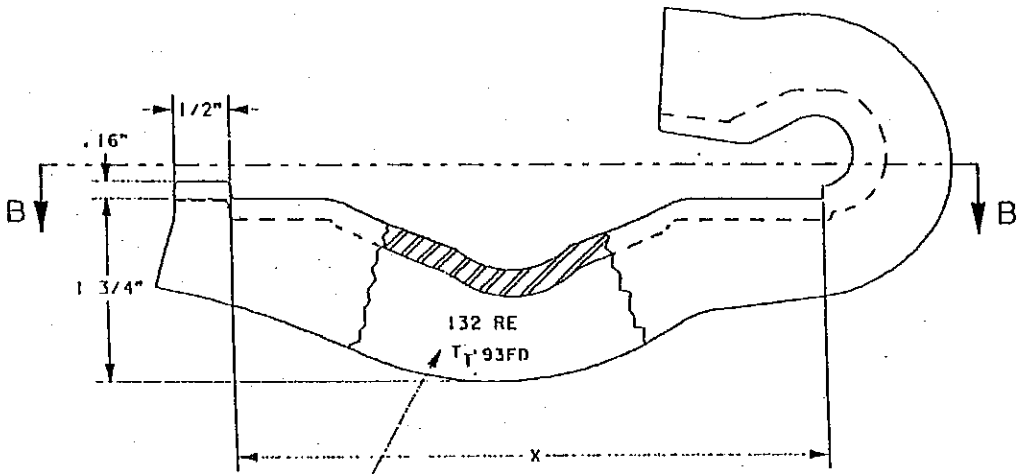
STD DWG
0453



SECTION "B-B"

RAIL SIZE	X	PROJECT ITEM NO.	MTCE. ITEM NO.
110-119#	5.56"	550-1413	550-1425
130-136#	6.06"	550-1648	550-1660





TYPICAL ANCHOR STAMP
132 RE = RAIL SIZE
T_T = LOGO
93 = YEAR MADE
F = MONTH (A=JAN., B=FEB., ... L=DEC.)
D = DATE (1=FIRST, ...5=FIFTH, A=SIXTH, ...
Z=THIRTY-FIRST)

NOTES:
MATERIAL: HIGH CARBON STEEL

HEAT TREAT TO Rc 34-47
TARGET RANGE Rc 39-44

ANCHOR PINCH TO BE 8-15 AS MEASURED WITH STANDOUT GAGE.

ALL DIMENSIONS ARE MINIMUM UNLESS OTHERWISE SPECIFIED.

FOR STANDARD ANCHOR PATTERNS, SEE STD DWG 0460

TYPICAL CHEMISTRY: CARBON .67-.90, MANGANESE .7-1.1, SILICON .5 MAX

UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

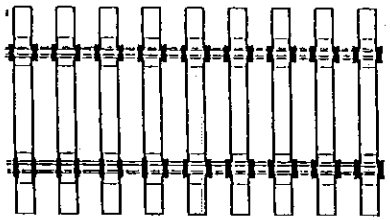
HEAVY DUTY RAIL ANCHOR

UNION PACIFIC

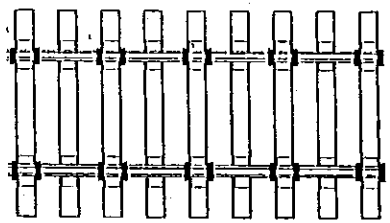
ADOPTED: DEC. 31, 1996
REVISED:
FILE NO.: 0457

STD DWG
0457

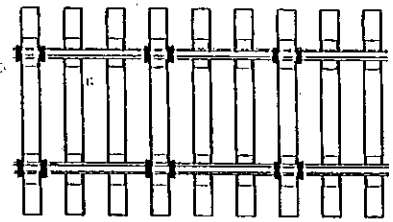
STD DWG
0457



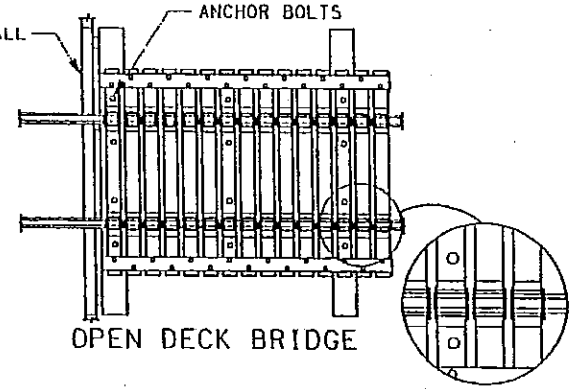
ANCHOR PATTERN NO. 1



ANCHOR PATTERN NO. 2



ANCHOR PATTERN NO. 3



OPEN DECK BRIDGE

NOTES:
CONTINUOUS WELDED RAIL:

MAIN TRACKS AND SIDINGS:
1) EVERY OTHER TIE BOX ANCHORED (USE PATTERN NO. 2).
2) BOX ANCHOR 120 TIES IN BOTH DIRECTIONS FROM OPEN DECK BRIDGES, NON BONDED JOINTS AND TURNOUTS (USE PATTERN NO. 1).
3) ON MAIN TRACKS WITH 95MGT OR MORE ANNUALLY OR WHERE AUTHORIZED BY THE CHIEF ENGINEER, BOX ANCHOR EVERY TIE (USE PATTERN NO. 1).

YARD AND INDUSTRY TRACKS:
1) BOX ANCHOR EVERY OTHER TIE (USE PATTERN NO. 2)

JOINTED RAIL:

MAIN TRACKS AND SIDINGS:
1) BOX ANCHOR EVERY OTHER TIE (USE PATTERN NO. 2)
2) BOX ANCHOR 48 TIES AHEAD OF POINT OF SWITCH AND BEHIND LAST TURNOUT TIE

YARD AND INDUSTRY TRACKS:
1) BOX ANCHOR EVERY THIRD TIE (USE PATTERN NO. 3)

TURNOUTS:
1) EVERY TIE BOX ANCHORED (USE PATTERN NO. 1).

OPEN DECK BRIDGES:
1) BOX ANCHOR 120 TIES AWAY FROM HEAD WALL ON ALL OPEN DECK BRIDGE APPROACHES (USE ANCHOR PATTERN NO. 1). SEE BRIDGE STD DWG 4031A FOR SPANS OVER 125' IN LENGTH.
2) ALL TIES ACROSS OPEN DECK BRIDGES WILL BE BOX ANCHORED (USE OPEN DECK PATTERN).

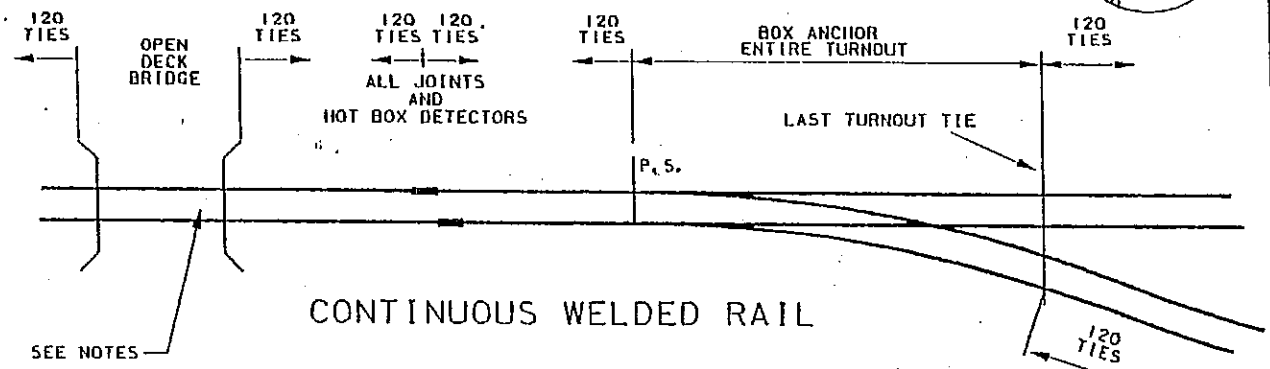
HOT BOX DETECTORS:
1) BOX ANCHOR 120 TIES AWAY FROM HOT BOX DETECTOR IN BOTH DIRECTIONS.

NEW ANCHORS TO BE USED ON ALL MAIN TRACKS ABOVE 30 MPH EXCEPT SECOND HAND ANCHORS CAN BE USED ON EVERY OTHER TIE IN TERRITORIES WHICH REQUIRE BOX ANCHORING EVERY TIE.

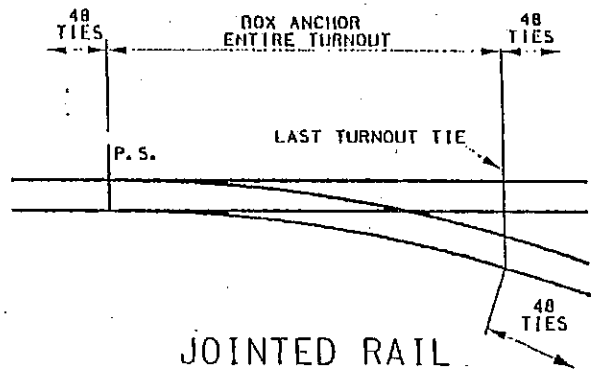
SECOND HAND ANCHORS TO BE USED ON MAIN TRACKS AND SIDINGS 30 MPH AND LESS.

SECOND HAND ANCHORS TO BE USED ON ALL YARD AND INDUSTRY TRACKS

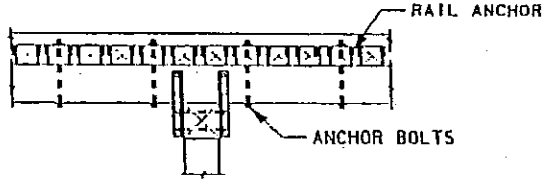
TRACK WITH ELASTIC FASTENERS:
WHERE ELASTIC FASTENERS FAIL TO PROPERLY RESTRAIN THE RAIL FROM MOVING LONGITUDINALLY, RAIL ANCHORS SHALL BE INSTALLED AS REQUIRED.



CONTINUOUS WELDED RAIL



JOINTED RAIL



ELEVATION AT INTERIOR BENT

NOTE:
WHERE PRACTICAL, ANCHOR TO BE INSTALLED FROM GAGE SIDE OF RAIL.

UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

ANCHOR PATTERNS

UNION PACIFIC

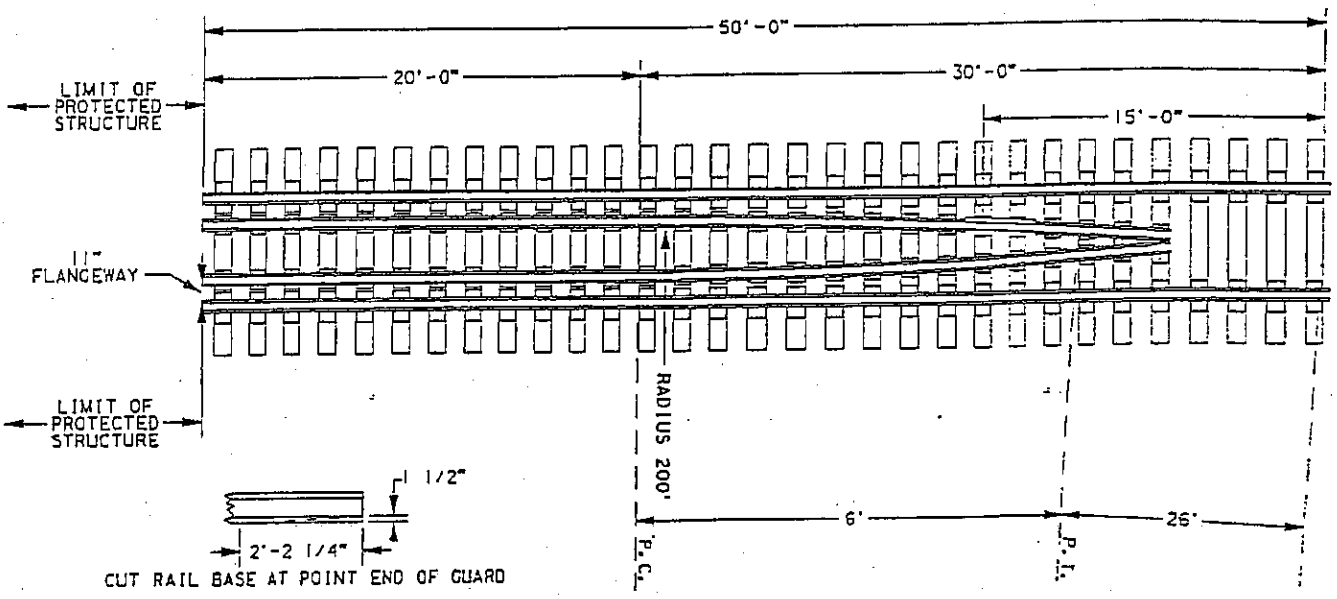
ADOPTED: DEC. 31, 1996
REVISED:
FILE NO.: 0460

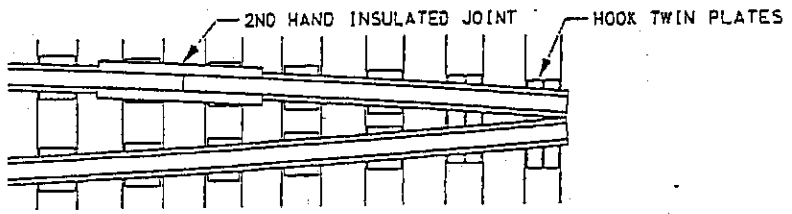
STD DWG
0460

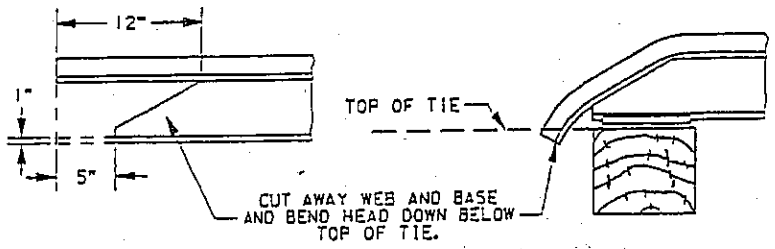
STD DWG
0460

STD DWG 4005

GENERAL ARRANGEMENT







DEPRESSED RAIL HEAD DETAIL

INSTALLATION

GRADE SEPARATION STRUCTURES:
DOUBLE INSIDE GUARD RAILS ARE TO BE INSTALLED ON ALL F.R.A. CLASS 4 AND 5 TRACK WHERE HORIZONTAL CLEARANCES ON BOTH SIDES ARE LESS THAN 18 FEET FROM THE CENTERLINE OF TRACK TO A SUPPORTING MEMBER. CLASS 2 CARRYING MORE THAN 20 M.G.T. TRAFFIC AND ALL CLASS 3 TRACK SHALL HAVE DOUBLE INSIDE GUARD RAILS INSTALLED WHERE HORIZONTAL CLEARANCE ON BOTH SIDES IS LESS THAN 12'-6" FROM THE CENTERLINE OF TRACK TO A STRUCTURE SUPPORTING MEMBER.

BRIDGES LOCATED ON CLASS 3, 4, AND 5 TRACK, ALONG WITH BRIDGES LOCATED ON CLASS 2 TRACK WITH OVER 20 M.G.T.

DOUBLE INSIDE GUARD RAILS ARE TO BE INSTALLED ON: ALL THROUGH OR DECK TRUSSES AND THROUGH PLATE GIRDER SPANS.
ALL BRIDGES THAT ARE 40 FEET OR HIGHER AND 150 FEET IN LENGTH, AND ON ALL BRIDGES 30 FEET OR MORE IN LENGTH WHERE CURVATURE EXCEEDS 5 DEGREES; UNLESS EXCEPTION IS APPROVED BY CHIEF ENGINEER.

TUNNELS:
DOUBLE INSIDE GUARD RAILS ARE TO BE INSTALLED THROUGH ALL TUNNELS WHERE DIRECTED BY CHIEF ENGINEER.

NOTES:
INSIDE GUARD RAILS SHALL BE MADE FROM SECOND HAND RAIL AND MAY BE OF THE SAME RAIL SECTION AS THE RUNNING RAILS BUT MUST NOT BE MORE THAN 23 LBS. LIGHTER THAN THE RUNNING RAILS.

NO INSIDE GUARD RAIL LIGHTER THAN 70 LBS. SHALL BE USED.

INSIDE GUARD RAILS ARE TO BE FULLY TIE PLATED WITH SECOND-HAND TIE PLATES. WHERE CLEARANCE PREVENTS THE USE OF TIE PLATES, HOOK TWIN PLATES CAN BE USED IN GUARD RIAL CONVERGENCE AREA.

MINIMUM CLEARANCE BETWEEN THE RUNNING RAIL PLATES AND THE GUARD RAIL PLATES MUST NOT BE LESS THAN 1".

INSTALL GUARD RAIL PLATES SO AS TO CANT THE GUARD RAIL OUTWARD TOWARD THE RUNNING RAIL. WHEN SINGLE SHOULDER FLAT GUARD RAIL PLATES ARE USED, INSTALL THE PLATES WITH THE SHOULDERS ON THE INSIDE TOWARD THE CENTER OF THE TRACK.

SECOND-HAND INSULATED JOINTS TO BE INSTALLED IN GUARD RAILS IN ALL SIGNAL TERRITORIES 15 FEET FROM END OF GOOD RAIL ON ONE SIDE.

INSIDE GUARD RAILS TO BE SPIKED TO THEIR FULL LENGTH WITH 2 SPIKES PER TIE. WHERE NECESSARY, PARTICULARLY ON CURVES, DOUBLE SPIKE GUARD RAIL BOTH INSIDE AND OUT.

ALL GUARD RAIL JOINTS TO BE FULLY BOLTED AND WHEN AVAILABLE, SECOND HAND JOINTS SHOULD BE USED.

GUARD RAIL TO BE LAID WITH FULL RAIL (NO JOINTS) IN THE CURVED POSITION.

GRADE SEPARATION SUPPORTING MEMBER REFERS TO, POSTS, COLUMNS, BENTS, PIERS, ABUTMENTS, ETC. SUPPORTING BRIDGES, VIADUCTS, ETC. OVER OR ADJACENT TO THE TRACK.

REF. PREVIOUS UP STD DWG PAGE 2503-A.

UNION PACIFIC RAILROAD
ENGINEERING STANDARDS

DOUBLE INSIDE GUARD RAIL

54

UNION PACIFIC

ADOPTED: OCT. 1905
REVISED: DEC. 30, 1996
FILE NO.: 4005

STD DWG 4005

March 1, 2002

Mr. David Booher, P.E., S.E.
International Engineering Consultants, Inc.
6420 South Sixth Street
Springfield, Illinois 62707

Re: Soil Borings
SPCSL Railroad over Meredith Drive
Section 98-00009-00-BR
Sherman, Illinois
PSI File Number: 020-15003 **Addendum #1**

Dear Mr. Booher:

In general accordance with your instructions, Professional Service Industries, Inc. (PSI) has performed nine (9) soil borings to depths ranging from 20 to 31½ feet below the ground surface at the above referenced site.

The borings were performed in the approximate locations determined and staked in the field by International Engineering Consultants, Inc. The boring locations and elevations were determined by International Engineering Consultants upon completion of the field operation and are noted on the attached boring logs.

The groundwater levels in the boreholes were noted during the boring operation and upon removal of the augers. These measurements are noted on the attached boring logs. The permeability of the soils, seasonal variations, temperature and recent rainfall conditions may influence water levels at other times.

Copies of the boring logs are appended. The stratification of the soils on the logs represents the soil conditions in the actual boring location. Lines of demarcation represent the approximate boundaries between the soil types, but the transition may be gradual.

Professional Service Industries, Inc. • 480 North Street • Springfield, IL 62704 • Phone 217/544-6663 • Fax 217/544-6148

Where soil tests are reported, they have been performed in accordance with generally acceptable or applicable standards.

Pursuant to your instructions, no conclusions or analyses have been made, but if we can be of further service, please do not hesitate to call.

Very truly yours,

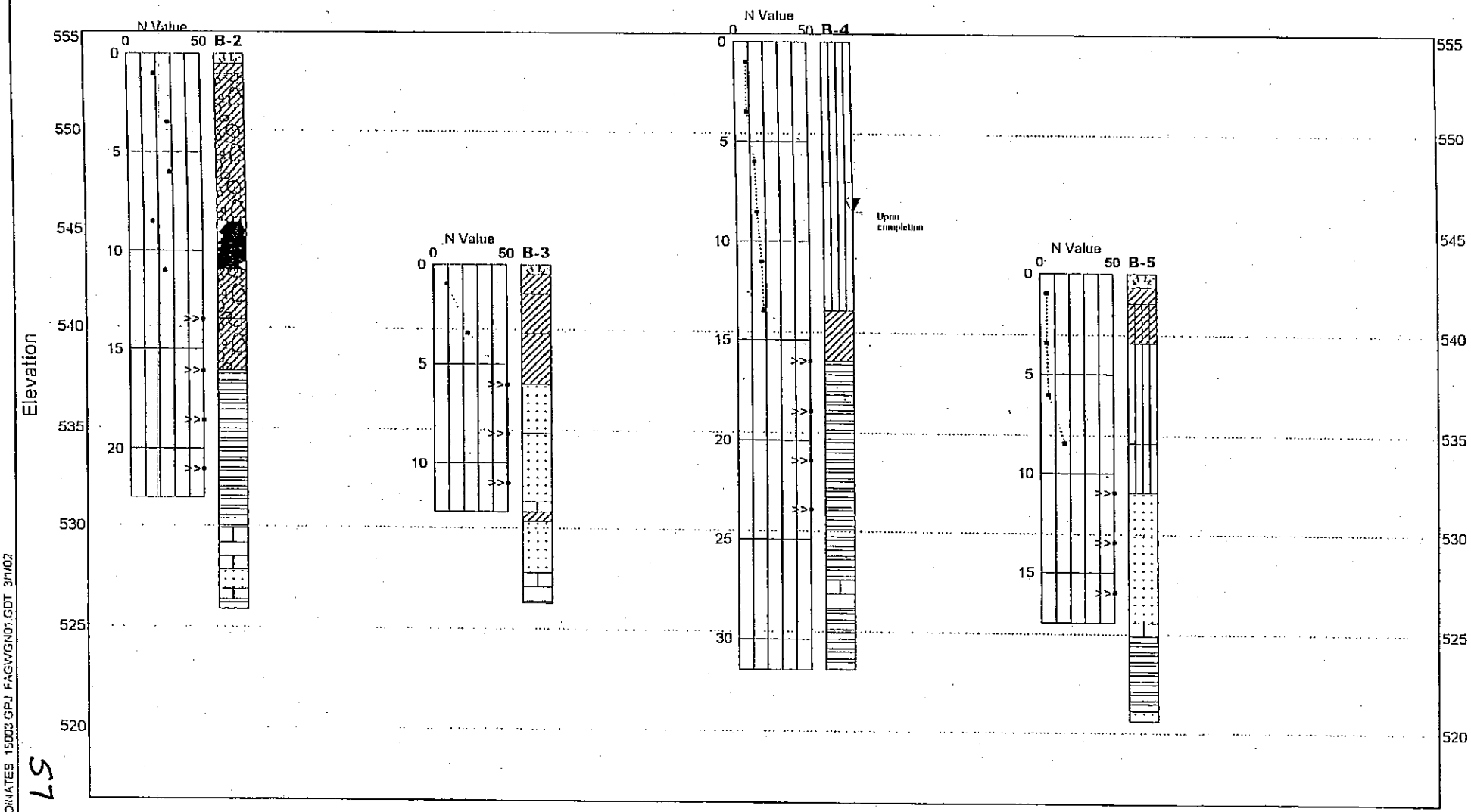
PROFESSIONAL SERVICE INDUSTRIES, INC.

Michael T. Haschemeyer, P.E.
Project Engineer

William P. Pongracz, P.E.
District Manager

Attachments:
Subsurface Soil Profile – Structural Borings
Subsurface Soil Profile – Meredith Drive
Subsurface Soil Profile – Shoofly Track
Boring Logs (9)
General Notes

(3) above



S7

SUBSURFACE PROFILE - WITHOUT COORDINATES 15003.GPJ FAGWGN01.GDT 3/1/02

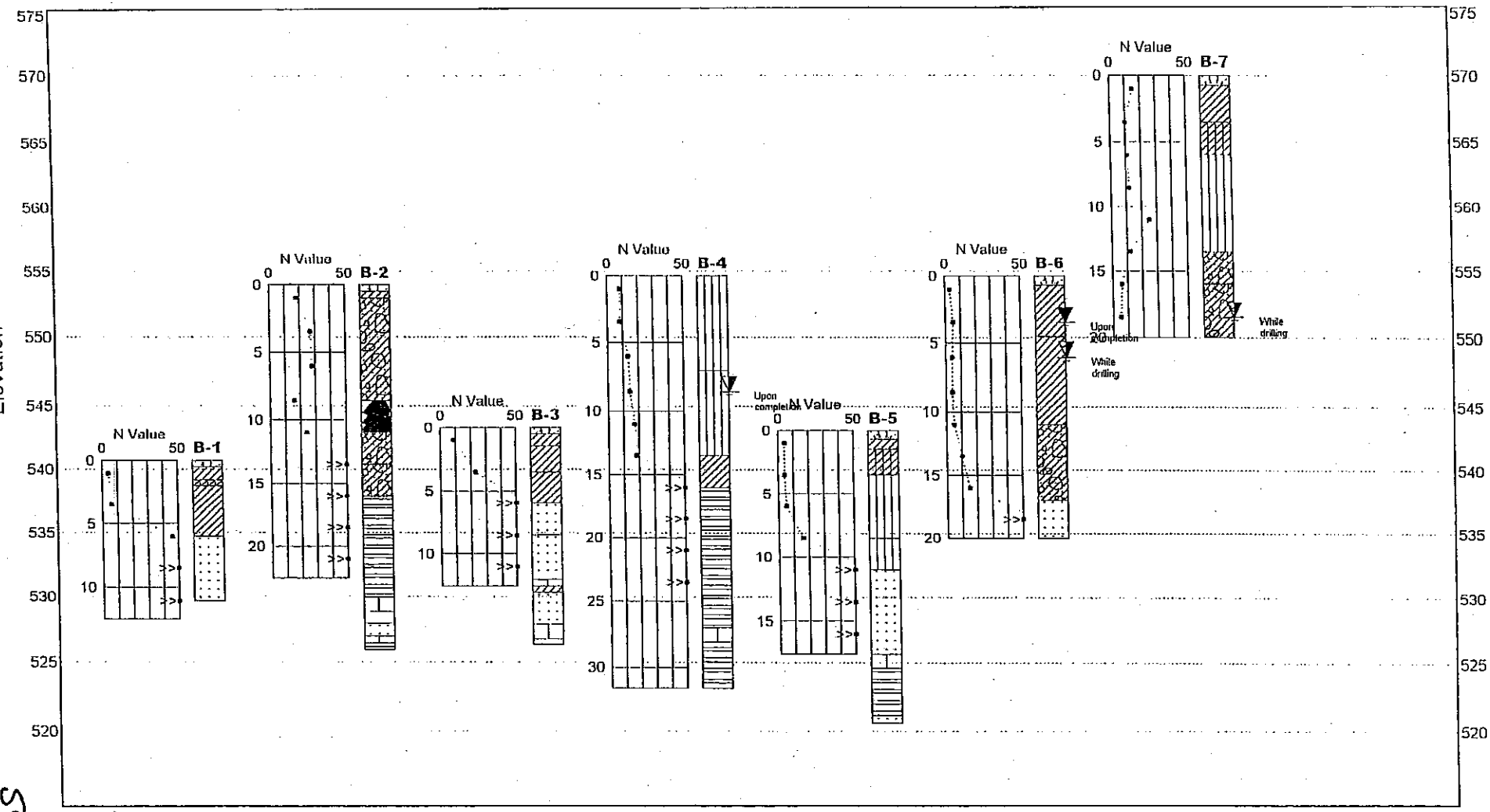
Professional Service Industries, Inc.

480 North Street
Springfield, IL 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

SUBSURFACE SOIL PROFILE
Structural Borings

PSI Project No.: 020-15003
Project Name: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Date: March 11, 2002



SUBSURFACE PROFILE - WITHOUT COORDINATES 15003.GPJ FAGWGI.01.GDT 3/1/02

Professional Service Industries, Inc.

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Springfield, IL 62704
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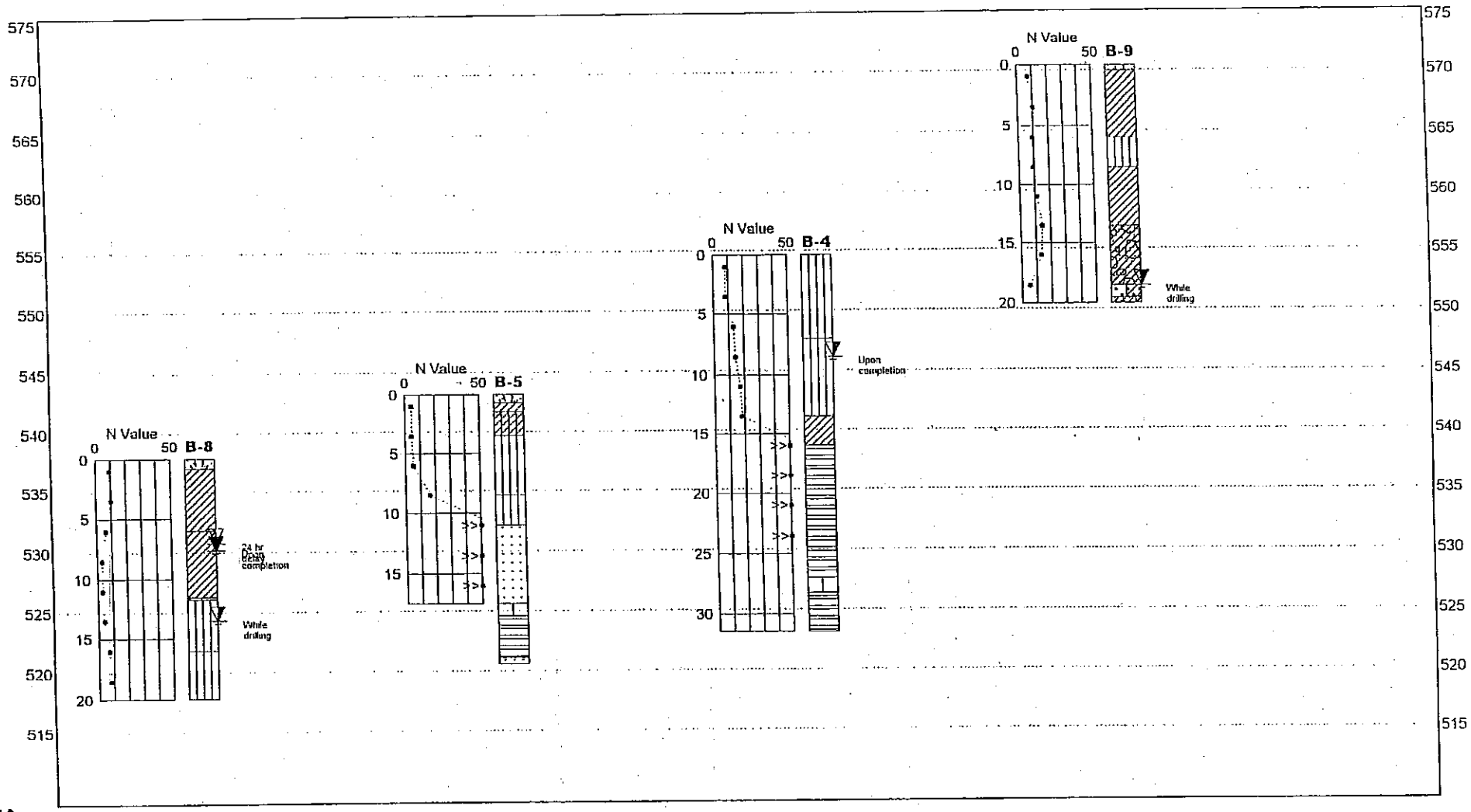
Fax: (217) 544-6148

SUBSURFACE SOIL PROFILE
Meredith Drive

PSI Project No.: 020-15003
Project Name: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Date: March 10 2002



SUBSURFACE PROFILE - WITHOUT COORDINATES 15003 GPJ FAGWG1101 GDT 3/1/02

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480 North Street
Springfield, IL 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

SUBSURFACE SOIL PROFILE
Shoofly Track

PSI Project No.: 020-15003
Project Name: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Date: March 10 2002

Professional Service Industries, Inc.
480 North Street
Springfield, IL 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 1

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 10+11, 8.5' Right Meredith Drive

WATER LEVELS
Dry upon completion

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✙ LL (1, 25, 50) STRENGTH, tsf ▲ Qu ✳ Qp (0, 2.0, 4.0)	Additional Remarks
						Surface Elev.: 540.7 ft					
540	0					Black silty CLAY with heavy organics to -4.5" (topsoil)	CL				
						Black silty CLAY	CL				
				1	18	Brown/dark gray clayey SILT to silty CLAY, firm to stiff	CL-ML	1-2-2 N=4	20	◎ ✳ ×	
						Dark gray silty CLAY, firm to stiff					
				2	18		CL	3-3-3 N=6	18	◎ × ✳	
535	5			3	18	Brown/gray SANDSTONE, hard		9-13-33 N=46	8	× ◎✳	
				4	18			50/3"	7	× >>◎	
530	10			5	0	Auger refusal at -11.1'		50/1"		>>◎	

Completion Depth: 12.5 ft
Date Boring Started: 11/20/01
Date Boring Completed: 11/20/01
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

60

The stratification lines represent approximate boundaries. The transition may be gradual.

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480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 2

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 12+57, 41' Left Meredith Drive

WATER LEVELS
Dry upon completion

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft; Moisture; PL; LL; STRENGTH, tsf Qu Qp	Additional Remarks
						Surface Elev.: 553.9 ft					
	0					Black silty CLAY with heavy organics to -6" (topsoil)	CL				
						Black silty CLAY, stiff	CL				
				1	18	Brown silty clay, trace sand and gravel, hard (till)		7-9-9 N=18	9		
550				2	18		CL	13-13-14 N=27	7		
	5			3	18			10-13-15 N=28	7		
545				4	18	COAL	COAL	7-7-9 N=16	51		
	10			5	18	Gray/brown silty CLAY, trace sand and gravel, hard (till)	CL	6-10-14 N=24	10		
540				6	18	Gray silty CLAY, trace sand and gravel, hard (till)	CL	15-26-30 N=56	7		
	15			7	5	Gray weathered SHALE, hard		50/5"	4		
				8	3			50/3"	4		
535	20			9	2			50/2"	4		
						Light gray Limestone, hard					

Continued Next Page

Completion Depth: 22.5 ft
Date Boring Started: 11/20/01
Date Boring Completed: 11/20/01
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

61

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 2

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 12+57, 41' Left Meredith Drive

WATER LEVELS
Dry upon completion

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✤ LL (1 – 25 – 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 – 2.0 – 4.0)	Additional Remarks
				10	60	Light gray Limestone, hard		RQD=36			
						light brown, SANDSTONE, hard					
						Light gray Limestone, hard					
						Gray weathered SHALE, hard					
						End of boring at -28'					

Completion Depth: 22.5 ft
Date Boring Started: 11/20/01
Date Boring Completed: 11/20/01
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

62

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 3

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 12+20, 43' Right Meredith Drive

WATER LEVELS
Dry upon completion

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA (N in blows/ft ◎; × Moisture; ◪ PL; ✱ LL; 1–25–50) / STRENGTH, tsf (▲ Qu; ✳ Qp; 0–2.0–4.0)	Additional Remarks
						Surface Elev.: 543.3 ft					
	0					Black silty CLAY with heavy organics to -4" (topsoil)	CL				
						Black silty CLAY, stiff	CL				
				1	18	Brown silty CLAY, stiff	CL	3-4-5 N=9	16		
540											
				2	18	Gray/brown silty CLAY, very stiff	CL	7-9-14 N=23	10		
	5										
				3	18	Brown/gray SANDSTONE, hard		32-50/6"	6		
535				4	5	Gray SANDSTONE, hard		50/5"	4		
	10			5	3			50/3"	6		
						Light gray LIMESTONE, hard	CL				
						Gray silty CLAY, very stiff to hard					
						Light brown SANDSTONE, hard					
				6	60			RQD=61			
						Light gray LIMESTONE, hard					
						End of Boring at -17'					

Completion Depth: 12.5 ft
Date Boring Started: 11/20/01
Date Boring Completed: 11/20/01
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

63

The stratification lines represent approximate boundaries. The transition may be gradual.

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480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 4

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 210+18, 12' Right
Soofly Track

WATER LEVELS
Upon completion 8.5 feet

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft / Moisture / PL / LL / STRENGTH, tsf Qu / Qp	Additional Remarks
						Surface Elev.: 554.6 ft					
	0			1	18	Brown silty CLAY to clayey SILT	ML	4-4-4 N=8	27		
				2	18			3-3-5 N=8	22		
550	5			3	18			6-5-8 N=13	15		
				4	18	Gray/brown clayey SILT		7-7-7 N=14	20		Qu = 2.1 tsf
545	10			5	18		ML	6-8-9 N=17	25		
				6	18	Gray silty CLAY	CL	5-7-11 N=18	21		Qu = 3.3 tsf
540	15			7	11	Gray very weathered SHALE, hard		22-50/5"	16		
				8	12			29-50/6"	10		
535	20			9	1			50/1"	7		
				10	1			50/1"	7		
530	25										

Continued Next Page

Completion Depth: 31.5 ft
Date Boring Started: 1/7/02
Date Boring Completed: 1/7/02
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

64

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 4

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-SR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 210+18, 12' Right
Soofly Track

WATER LEVELS
Upon completion 8.5 feet

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (1 – 25 – 50) STRENGTH, tsf ▲ Qu ✳ Qp (0 – 2.0 – 4.0)	Additional Remarks
	25					Gray very weathered SHALE, hard					
						Light gray LIMESTONE, hard					
				11	60	Gray weathered SHALE, hard		RQD=19			
525	30					End of boring at -31.5'					

Completion Depth: 31.5 ft
Date Boring Started: 1/7/02
Date Boring Completed: 1/7/02
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

65

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 5

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 208+97, 2.8' Right
Soofly Track

WATER LEVELS
Dry upon completion

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	Additional Remarks
						Surface Elev.: 543.1 ft				
	0					Black silty CLAY with heavy organics to -9" (topsoil)	CL			
						Black silty CLAY, firm	CL			
				1	18	Dark gray/brown silty CLAY to clayey SILT, firm	CL-ML	2-2-2 N=4	25	
540										
				2	18	Brown clayey SILT, firm to stiff		2-2-2 N=4	21	Qu = 0.4 tsf
	5						ML			
				3	18			2-2-3 N=5	16	
535										
				4	18	Light brown/gray clayey SILT, stiff	ML	5-6-10 N=16	10	
	10									
				5	8	Gray/brown SANDSTONE, some SILT, hard		25-50/2"	9	
530										
				6	2			50/2"	4	
	15									
				7	5			50/5"		
						Light gray LIMESTONE, hard				
						Light gray weathered SHALE, hard				
				8	60			RQD=36		
						Light Brown SANDSTONE, hard				
						End of boring at -22.5'				

STANDARD PENETRATION TEST DATA
N in blows/ft
Moisture
PL
LL
1 25 50
STRENGTH, tsf
Qu
Qp
0 2.0 4.0

Completion Depth: 17.5 ft
Date Boring Started: 11/21/01
Date Boring Completed: 11/21/01
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

66

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 6

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 16+16, centerline Meredith Drive

WATER LEVELS
Upon completion 3.5 feet
While drilling 6.0 feet

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ / STRENGTH, tsf	Additional Remarks
						Surface Elev.: 554.6 ft				Moisture × PL ◪ LL ✚ (1–25–50); Qu ▲ Qp ✳ (0–2.0–4.0)	
	0					Black silty CLAY with heavy organics to -9" (topsoil)	CL				
				1	18	Black silty CLAY, firm to stiff		1-2-1 N=3	33	◎ ▲ ✳ ×	Qu = 0.6 tsf
				2	18		CL	1-2-3 N=5	33	◎ ✳ ▲ ×	Qu = 1.4 tsf
550	5					Dark gray silty CLAY, firm					
				3	18			1-2-2 N=4	32	◎ ▲ ✳ ×	Qu = 0.8 tsf
							CL				
				4	18			0-2-2 N=4	29	◎ ▲ ×✳	Qu = 0.8 tsf
545	10										
				5	18	Brown/gray silty CLAY, trace sand and gravel, stiff (till)		0-2-3 N=5	22	◎ ✳×	
				6	18		CL	4-5-5 N=10	46	◎ ▲ ×✳	Qu = 2.3 tsf
540	15										
				7	18			5-7-8 N=15	27	◎ × ✳	
						Brown SANDSTONE					
				8	18			31-50/3"	14	× >>✳	
535	20					End of boring at -20'					

Completion Depth: 20.0 ft
Date Boring Started: 11/19/01
Date Boring Completed: 11/19/01
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

67

Note: The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 7

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 20+60, centerline Meredith Drive

WATER LEVELS
While drilling 18.5 feet

Elevation, (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft; Moisture; PL; LL; STRENGTH, tsf Qu Qp	Additional Remarks
	0					Surface Elev.: 570.0 ft					
						Black silty CLAY with heavy organics to -9" (topsoil)	CL				
				1	18	Brown silty CLAY, stiff	CL	6-7-8 N=15	16		
				2	18	Brown/gray clayey SILT to silty CLAY, stiff	CL-ML	5-5-5 N=10	15		
565	5										
				3	18	Brown clayey SILT, very stiff		5-5-6 N=11	14		
				4	18		ML	4-5-7 N=12	13		
560	10										
				5	18			6-7-18 N=25	14	Qu = 3.7 tsf	
				6	18	Gray/brown silty CLAY, trace sand and gravel, stiff (till)	CL	5-6-6 N=12	16	Qu = 2.7 tsf	
555	15										
				7	18	Gray/brown silty CLAY, some sand, trace gravel (till)	CL	5-3-3 N=6	14		
				8	18			2-2-3 N=5	14		
550	20					End of boring at -20'					

Completion Depth: 20.0 ft
Date Boring Started: 11/19/01
Date Boring Completed: 11/19/01
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

68

Line stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 8

PSI Job No.:	020-15003	Drilling Method:	Split Spoon
Project:	SPCSL RR over Meredith Drive	Sampling Method:	3 1/4 Hollow Stem Auger
Location:	Sec 98-00009-00-BR	Hammer Type:	Automatic
	Sherman, Illinois	Boring Location:	Station 205+22, 87' Right Soofly Track

WATER LEVELS

24 hr delay	7 feet
Upon completion	7.6 feet
While drilling	13.5 feet

Surface Elev.: 537.8 ft

Depth (feet)	Sample No.	Recovery (inches)	Material Description	USCS Classification	SPT Blows per 6-inch	Moisture, %	Additional Remarks
0			Black silty CLAY with heavy organics to -9" (topsoil)	CL			
	1	18	Black silty CLAY, firm to stiff	CL	3-4-5 N=9	11	
	2	18			5-5-5 N=10	10	
	3	18	Gray/brown silty CLAY, firm	CL	3-3-3 N=6	22	Qu = 0.6 tsf
	4	18			0-2-1 N=3	20	
	5	18	3" Sand Seam, fine to medium	SP	1-2-1 N=3	17	
			Gray/brown clayey SILT, firm	ML			
	6	18			2-2-2 N=4	20	
	7	18	Gray clayey SILT, firm to stiff	ML	3-3-4 N=7	19	
	8	18			3-4-4 N=8	18	Qu = 1.0 tsf
20			End of boring at -20'				

Elevation (feet) scale: 535, 530, 525, 520. Depth (feet) scale: 0, 5, 10, 15, 20.

STANDARD PENETRATION TEST DATA: N in blows/ft ◎; × Moisture; PL; LL (scale 1, 25, 50). STRENGTH, tsf: ▲ Qu, ✳ Qp (scale 0, 2.0, 4.0).

Completion Depth:	20.0 ft
Date Boring Started:	11/19/01
Date Boring Completed:	11/19/01
Logged By:	Harry Waters
Drilling Contractor:	PSI, Inc.

Sample Types: Auger Cutting; Split-Spoon; Rock Core; Shelby Tube; Hand Auger

Remarks:

The stratification lines represent approximate boundaries. The transition may be gradual.

Professional Service Industries, Inc.
480 North Street
Springfield, Illinois 62704
Telephone: (217) 544-6663
Fax: (217) 544-6148

LOG OF BORING 9

PSI Job No.: 020-15003
Project: SPCSL RR over Meredith Drive
Location: Sec 98-00009-00-BR
Sherman, Illinois

Drilling Method: Split Spoon
Sampling Method: 3 1/4 Hollow Stem Auger
Hammer Type: Automatic
Boring Location: Station 213+62, 27' Right
Soofly Track

WATER LEVELS
While drilling 18.5 feet

Surface Elev.: 570.4 ft

Elevation, (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch	Moisture, %	Additional Remarks
570	0	1	18	Black silty CLAY with heavy organics to -9" (topsoil) Brown silty CLAY	CL	3-3-4 N=7	16	
		2	18		CL	4-5-5 N=10	15	
565	5	3	18	Gray/brown clayey SILT	ML	4-4-5 N=9	17	Qu = 1.6 tsf
		4	18	Brown silty CLAY		3-4-5 N=9	16	
560	10	5	18		CL	4-5-6 N=11	15	Qu = 2.5 tsf
		6	18	Brown/gray silty CLAY, trace sand and gravel, stiff to very stiff (till)		5-7-7 N=14	13	>> Qu = 4.7 tsf
555	15	7	18		CL	5-6-7 N=13	14	Qu = 3.3 tsf
		8	18	Brown silty CLAY with SAND, fine to medium	SP	3-2-3 N=5	19	
	20			Brown silty CLAY, trace sand and gravel, stiff to very stiff (till) End of boring at -20'	CL			

STANDARD PENETRATION TEST DATA
N in blows/ft
Moisture PL LL
1 25 50
STRENGTH, tsf
Qu Qp
0 2.0 4.0

Completion Depth: 20.0 ft
Date Boring Started: 11/20/01
Date Boring Completed: 11/20/01
Logged By: Harry Waters
Drilling Contractor: PSI, Inc.

Sample Types:
Auger Cutting
Split-Spoon
Rock Core
Shelby Tube
Hand Auger

Remarks:

70

The stratification lines represent approximate boundaries. The transition may be gradual.

GENERAL NOTES

SAMPLE IDENTIFICATION

The Unified Soil Classificaton System is used to identify the soil unless otherwise noted.

SOIL PROPERTY SYMBOLS

N: Standard "N" penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch O.D. split-spoon.

Qu: Unconfined compressive strength, TSF.

Qp: Penetrometer value, unconfined compressive strength, TSF.

Mc: Water content, %.

LL: Liquid limit, %.

PI: Plasticity index, %.

δd: Natural dry density, PCF.

▼: Apparent groundwater level at time noted after completion of boring.

DRILLING AND SAMPLING SYMBOLS

SS: Split-Spoon - 1 3/8" I.D., 2" O.D., except where noted.
ST: Shelby Tube - 3" O.D., except where noted.
AU: Auger Sample.
DB: Diamond Bit.
CB: Carbide Bit.
WS: Washed Sample.

RELATIVE DENSITY AND CONSISTENCY CLASSIFICATION

TERM (NON-COHESIVE SOILS)	STANDARD PENETRATION RESISTANCE
Very Loose	0-4
Loose	4-10
Medium	10-30
Dense	30-50
Very Dense	Over 50

TERM (COHESIVE SOILS)	Qu - (TSF)
Very Soft	0 - 0.25
Soft	0.25 - 0.50
Firm (Medium)	0.50 - 1.00
Stiff	1.00 - 2.00
Very Stiff	2.00 - 4.00
Hard	4.00+

PARTICLE SIZE

Boulders	8 in.+	Coarse Sand	5mm-0.6mm	Silt	0.074mm-0.005mm
Cobbles	8 in.-3 in.	Medium Sand	0.6mm-0.2mm	Clay	-0.005mm
Gravel	3 in.-5mm	Fine Sand	0.2mm-0.074mm		

Disadvantaged Business Enterprise Participation

Effective: September 1, 2000
Revised: October 1, 2003

FEDERAL OBLIGATION. The Department of Transportation, as a recipient of federal financial assistance, is required to take all necessary and reasonable steps to ensure nondiscrimination in the award and administration of contracts. Consequently, the federal regulatory provisions of 49 CFR part 26 apply to this contract concerning the utilization of disadvantaged business enterprises. This Special Provision will also be used by the Department to satisfy the requirements of the Business Enterprise for Minorities, Females, and Persons with Disabilities Act, 30 ILCS 575. For the purposes of this Special Provision, a disadvantaged business enterprise (DBE) means a business certified by the Department in accordance with the requirements of 49 CFR part 26 and listed in the DBE Directory or most recent addendum.

CONTRACTOR ASSURANCE. The Contractor makes the following assurance and agrees to include the assurance in each subcontract that the Contractor signs with a subcontractor:

> The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of federally-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate.

OVERALL GOAL SET FOR THE DEPARTMENT. As a requirement of compliance with 49 CFR part 26, the Department has set an overall goal for DBE participation in its federally assisted contracts. That goal applies to all federal-aid funds the Department will expend in its federally assisted contracts for the subject reporting fiscal year. The Department is required to make a good faith effort to achieve the overall goal. The dollar amount paid to all approved DBE firms performing work called for in this contract is eligible to be credited toward fulfillment of the Department's overall goal.

CONTRACT GOAL TO BE ACHIEVED BY THE CONTRACTOR. This contract includes a specific DBE utilization goal established by the Department. The goal has been included because the Department has determined that the work of this contract has subcontracting opportunities that may be suitable for performance by DBE companies. This determination is based on an assessment of the type of work, the location of the work, and the availability of DBE companies to do a part of the work. The assessment indicates that, in the absence of unlawful discrimination, and in an arena of fair and open competition, DBE companies can be expected to perform 7 % of the work. This percentage is set as the DBE participation goal for this contract. Consequently, in addition to the other award criteria established for this contract, the Department will award this contract to a bidder who makes a good faith effort to meet this goal of DBE participation in the performance of the work. A bidder makes a good faith effort for award consideration if either of the following is done in accordance with the procedures set forth in this Special Provision:

(a) The bidder documents that firmly committed DBE participation has been obtained to meet the goal; or

(b) The bidder documents that a good faith effort has been made to meet the goal, even though the effort did not succeed in obtaining enough DBE participation to meet the goal.

DBE LOCATOR REFERENCES. Bidders may consult the DBE Directory as a reference source for DBE companies certified by the Department. In addition, the Department maintains a letting and item specific DBE locator information system whereby DBE companies can register their interest in providing quotes

on particular bid items advertised for letting. Information concerning DBE companies willing to quote work for particular contracts may be obtained by contacting the Department's Bureau of Small Business Enterprises at telephone number (217)785-4611, or by visiting the Department's web site at www.dot.state.il.us.

BIDDING PROCEDURES. Compliance with the bidding procedures of this Special Provision is required prior to the award of the contract and the failure of the as-read low bidder to comply will render the bid nonresponsive.

(a) In order to assure the timely award of the contract, the as-read low bidder must submit a Disadvantaged Business Utilization Plan on Department form SBE 2026 within seven (7) working days after the date of letting. To meet the seven (7) day requirement , the bidder may send the Plan by certified mail or delivery service within the seven (7) working day period. If a question arises concerning the mailing date of a Plan, the mailing date will be established by the U.S. Postal Service postmark on the original certified mail receipt from the U.S. Postal Service or the receipt issued by a delivery service. It is the responsibility of the as-read low bidder to ensure that the postmark or receipt date is affixed within the seven (7) working days if the bidder intends to rely upon mailing or delivery to satisfy the submission day requirement. The Plan is to be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). It is the responsibility of the bidder to obtain confirmation of telefax delivery. The Department will not accept a Utilization Plan if it does not meet the seven (7) day submittal requirement, and the bid will be declared nonresponsive. In the event the bid is declared nonresponsive due to a failure to submit a Plan or failure to comply with the bidding procedures set forth herein, the Department may elect to cause the forfeiture of the penal sum of the bidder's proposal guaranty, and may deny authorization to bid the project if re-advertised for bids. The Department reserves the right to invite any other bidder to submit a Utilization Plan at any time for award consideration or to extend the time for award.

(b) The Utilization Plan shall indicate that the bidder either has obtained sufficient DBE participation commitments to meet the contract goal or has not obtained enough DBE participation commitments in spite of a good faith effort to meet the goal. The Utilization Plan shall further provide the name, telephone number and telefax number of a responsible official of the bidder designated for purposes of notification of plan approval or disapproval under the procedures of this Special Provision.

(c) The Utilization Plan shall include a DBE Participation Commitment Statement, Department form SBE 2025, for each DBE proposed for the performance of work to achieve the contract goal. The signatures on these forms must be original signatures. All elements of information indicated on the said form shall be provided, including but not limited to the following:

(1) The name and address of each DBE to be used;

(2) A description, including pay item numbers, of the commercially useful work to be done by each DBE;

(3) The price to be paid to each DBE for the identified work specifically stating the quantity, unit price and total subcontract price for the work to be completed by the DBE. If partial pay items are to be performed by the DBE, indicate the portion of each item, a unit price where appropriate and the subcontract price amount;

(4) A commitment statement signed by the bidder and each DBE evidencing availability and intent to perform commercially useful work on the project; and

(5) If the bidder is a joint venture comprised of DBE firms and non-DBE firms, the plan must also include a clear identification of the portion of the work to be performed by the DBE partner(s).

(d) The contract will not be awarded until the Utilization Plan submitted by the bidder is approved. The Utilization Plan will be approved by the Department if the Plan commits sufficient commercially useful DBE work performance to meet the contract goal. The Utilization Plan will not be approved by the Department if the Plan does not commit sufficient DBE performance to meet the contract goal unless the bidder documents that it made a good faith effort to meet the goal. The good faith procedures of Section VIII of this special provision apply. If the Utilization Plan is not approved because it is deficient in a technical matter, unless waived by the Department, the bidder will be notified and will be allowed no less than a five (5) working day period in order to cure the deficiency.

CALCULATING DBE PARTICIPATION. The Utilization Plan values represent work anticipated to be performed and paid for upon satisfactory completion. The Department is only able to count toward the achievement of the overall goal and the contract goal the value of payments made for the work actually performed by DBE companies. In addition, a DBE must perform a commercially useful function on the contract to be counted. A commercially useful function is generally performed when the DBE is responsible for the work and is carrying out its responsibilities by actually performing, managing, and supervising the work involved. The Department and Contractor are governed by the provisions of 49 CFR part 26.55(c) on questions of commercially useful functions as it affects the work. Specific counting guidelines are provided in 49 CFR part 26.55, the provisions of which govern over the summary contained herein.

(a) DBE as the Contractor: 100% goal credit for that portion of the work performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontracts to a non-DBE firm does not count toward the DBE goals.

(b) DBE as a joint venture Contractor: 100% goal credit for that portion of the total dollar value of the contract equal to the distinct, clearly defined portion of the work performed by the DBE's own forces.

(c) DBE as a subcontractor: 100% goal credit for the work of the subcontract performed by the DBE's own forces, including the cost of materials and supplies. Work that a DBE subcontractor in turn subcontracts to a non-DBE firm does not count toward the DBE goal.

(d) DBE as a trucker: 100% goal credit for trucking participation provided the DBE is responsible for the management and supervision of the entire trucking operation for which it is responsible. At least one truck owned, operated, licensed and insured by the DBE must be used on the contact. Credit will be given for the full value of all such DBE trucks operated using DBE employed drivers. Goal credit will be limited to the value of the reasonable fee or commission received by the DBE if trucks are leased from a non-DBE company.

(e) DBE as a material supplier:

(1) 60% goal credit for the cost of the materials or supplies purchased from a DBE regular dealer.

(2) 100% goal credit for the cost of materials or supplies obtained from a DBE manufacturer.

(3) 100% credit for the value of reasonable fees and commissions for the procurement of materials and supplies if not a regular dealer or manufacturer.

GOOD FAITH EFFORT PROCEDURES. If the bidder cannot obtain sufficient DBE commitments to meet the contract goal, the bidder must document in the Utilization Plan the good faith efforts made in

the attempt to meet the goal. This means that the bidder must show that all necessary and reasonable steps were taken to achieve the contract goal. Necessary and reasonable steps are those which could reasonably be expected to obtain sufficient DBE participation. The Department will consider the quality, quantity and intensity of the kinds of efforts that the bidder has made. Mere *pro forma* efforts are not good faith efforts; rather, the bidder is expected to have taken those efforts that would be reasonably expected of a bidder actively and aggressively trying to obtain DBE participation sufficient to meet the contract goal.

(a) The following is a list of types of action that the Department will consider as part of the evaluation of the bidder's good faith efforts to obtain participation. These listed factors are not intended to be a mandatory checklist and are not intended to be exhaustive. Other factors or efforts brought to the attention of the Department may be relevant in appropriate cases, and will be considered by the Department.

(1) Soliciting through all reasonable and available means (e.g. attendance at pre-bid meetings, advertising and/or written notices) the interest of all certified DBE companies that have the capability to perform the work of the contract. The bidder must solicit this interest within sufficient time to allow the DBE companies to respond to the solicitation. The bidder must determine with certainty if the DBE companies are interested by taking appropriate steps to follow up initial solicitations.

(2) Selecting portions of the work to be performed by DBE companies in order to increase the likelihood that the DBE goals will be achieved. This includes, where appropriate, breaking out contract work items into economically feasible units to facilitate DBE participation, even when the prime contractor might otherwise prefer to perform these work items with its own forces.

(3) Providing interested DBE companies with adequate information about the plans, specifications, and requirements of the contract in a timely manner to assist them in responding to a solicitation.

(4) a. Negotiating in good faith with interested DBE companies. It is the bidder's responsibility to make a portion of the work available to DBE subcontractors and suppliers and to select those portions of the work or material needs consistent with the available DBE subcontractors and suppliers, so as to facilitate DBE participation. Evidence of such negotiation includes the names, addresses, and telephone numbers of DBE companies that were considered; a description of the information provided regarding the plans and specifications for the work selected for subcontracting; and evidence as to why additional agreements could not be reached for DBE companies to perform the work.

b. A bidder using good business judgment would consider a number of factors in negotiating with subcontractors, including DBE subcontractors, and would take a firm's price and capabilities as well as contract goals into consideration. However, the fact that there may be some additional costs involved in finding and using DBE companies is not in itself sufficient reason for a bidder's failure to meet the contract DBE goal, as long as such costs are reasonable. Also, the ability or desire of a prime contractor to perform the work of a contract with its own organization does not relieve the bidder of the responsibility to make good faith efforts. Prime contractors are not, however, required to accept higher quotes from DBE companies if the price difference is excessive or unreasonable.

(5) Not rejecting DBE companies as being unqualified without sound reasons based on a thorough investigation of their capabilities. The contractor's standing within its industry, membership in specific groups, organizations, or associations and political or social affiliations (for example union vs. non-union employee status) are not legitimate causes for the rejection or non-solicitation of bids in the contractor's efforts to meet the project goal.

(6) Making efforts to assist interested DBE companies in obtaining bonding, lines of credit, or insurance as required by the recipient or contractor.

(7) Making efforts to assist interested DBE companies in obtaining necessary equipment, supplies, materials, or related assistance or services.

(8) Effectively using the services of available minority/women community organizations; minority/women contractors' groups; local, state, and Federal minority/women business assistance offices; and other organizations as allowed on a case-by-case basis to provide assistance in the recruitment and placement of DBE companies.

(b) If the Department determines that the Contractor has made a good faith effort to secure the work commitment of DBE companies to meet the contract goal, the Department will award the contract provided that it is otherwise eligible for award. If the Department determines that a good faith effort has not been made, the Department will notify the bidder of that preliminary determination by contacting the responsible company official designated in the Utilization Plan. The preliminary determination shall include a statement of reasons why good faith efforts have not been found, and may include additional good faith efforts that the bidder could take. The notification will designate a five (5) working day period during which the bidder shall take additional efforts. The bidder is not limited by a statement of additional efforts, but may take other action beyond any stated additional efforts in order to obtain additional DBE commitments. The bidder shall submit an amended Utilization Plan if additional DBE commitments to meet the contract goal are secured. If additional DBE commitments sufficient to meet the contract goal are not secured, the bidder shall report the final good faith efforts made in the time allotted. All additional efforts taken by the bidder will be considered as part of the bidder's good faith efforts. If the bidder is not able to meet the goal after taking additional efforts, the Department will make a pre-final determination of the good faith efforts of the bidder and will notify the designated responsible company official of the reasons for an adverse determination.

(c) The bidder may request administrative reconsideration of a pre-final determination adverse to the bidder within the five (5) working days after the notification date of the determination by delivering the request to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764 (Telefax: (217)785-1524). Deposit of the request in the United States mail on or before the fifth business day shall not be deemed delivery. The pre-final determination shall become final if a request is not made and delivered. A request may provide additional written documentation and/or argument concerning the issue of whether an adequate good faith effort was made to meet the contract goal. In addition, the request shall be considered a consent by the bidder to extend the time for award. The request will be forwarded to the Department's Reconsideration Officer. The Reconsideration Officer will extend an opportunity to the bidder to meet in person in order to consider all issues of whether the bidder made a good faith effort to meet the goal. After the review by the Reconsideration Officer, the bidder will be sent a written decision within ten (10) working days after receipt of the request for reconsideration, explaining the basis for finding that the bidder did or did not meet the goal or make adequate good faith efforts to do so. A final decision by the Reconsideration Officer that a good faith effort was made shall approve the Utilization Plan submitted by the bidder and shall clear the contract for award. A final decision that a good faith effort was not made shall render the bid nonresponsive.

CONTRACT COMPLIANCE. Compliance with this Special Provision is an essential part of the contract. The Department is prohibited by federal regulations from crediting the participation of a DBE included in the Utilization Plan toward either the contract goal or the Department's overall goal until the amount to be applied toward the goals has been paid to the DBE. The following administrative procedures and remedies govern the compliance by the Contractor with the contractual obligations established by the

Utilization Plan. After approval of the Plan and award of the contract, the Utilization Plan and individual DBE Participation Statements become part of the contract. If the contractor did not succeed in obtaining enough DBE participation to achieve the advertised contract goal, and the Utilization Plan was approved and contract awarded based upon a determination of good faith, the total dollar value of DBE work calculated in the approved Utilization Plan as a percentage of the awarded contract value shall become the amended contract goal.

(a) No amendment to the Utilization Plan may be made without prior written approval from the Department's Bureau of Small Business Enterprises. All requests for amendment to the Utilization Plan shall be submitted to the Department of Transportation, Bureau of Small Business Enterprises, Contract Compliance Section, 2300 South Dirksen Parkway, Room 319, Springfield, Illinois 62764. Telephone number (217) 785-4611. Telefax number (217) 785-1524.

(b) All work indicated for performance by an approved DBE shall be performed, managed and supervised by the DBE executing the Participation Statement. The Contractor shall not terminate for convenience a DBE listed in the Utilization Plan and then perform the work of the terminated DBE with its own forces, those of an affiliate or those of another subcontractor, whether DBE or not, without first obtaining the written consent of the Bureau of Small Business Enterprises to amend the Utilization Plan. If a DBE listed in the Utilization Plan is terminated for reasons other than convenience, or fails to complete its work on the contract for any reason, the Contractor shall make good faith efforts to find another DBE to substitute for the terminated DBE. The good faith efforts shall be directed at finding another DBE to perform at least the same amount of work under the contract as the DBE that was terminated, but only to the extent needed to meet the contract goal or the amended contract goal. The Contractor shall notify the Bureau of Small Business Enterprises of any termination for reasons other than convenience, and shall obtain approval for inclusion of the substitute DBE in the Utilization Plan. If good faith efforts following a termination of a DBE for cause are not successful, the Contractor shall contact the Bureau and provide a full accounting of the efforts undertaken to obtain substitute DBE participation. The Bureau will evaluate the good faith efforts in light of all circumstances surrounding the performance status of the contract, and determine whether the contract goal should be amended.

(c) The Contractor shall maintain a record of payments for work performed to the DBE participants. The records shall be made available to the Department for inspection upon request. After the performance of the final item of work or delivery of material by a DBE and final payment therefor to the DBE by the Contractor, but not later than thirty (30) calendar days after payment has been made by the Department to the Contractor for such work or material without regard to any retainage withheld by the Department, the Contractor shall submit a DBE Payment Report on Department form SBE 2115 to the District Engineer. If full and final payment has not been made to the DBE, the Report shall indicate whether a disagreement as to the payment required exists between the Contractor and the DBE or if the Contractor believes that the work has not been satisfactorily completed. If the Contractor does not have the full amount of work indicated in the Utilization Plan performed by the DBE companies indicated in the Plan, the Department will deduct from contract payments to the Contractor the amount of the goal not achieved as liquidated and ascertained damages.

(d) The Department reserves the right to withhold payment to the Contractor to enforce the provisions of this Special Provision. Final payment shall not be made on the contract until such time as the Contractor submits sufficient documentation demonstrating achievement of the goal in accordance with this Special Provision or after liquidated damages have been determined and collected.

Payments to Subcontractors

Effective: June 1, 2000
Revised: September 1, 2003

Federal regulations found at 49 CFR §26.29 mandate the Department to establish a contract clause to require Contractors to pay subcontractors for satisfactory performance of their subcontracts no later than 30 days from the receipt of each payment made to the Contractor.

State law addresses the timing of payments to be made to subcontractors. Section 7 of the Prompt Payment Act, 30 ILCS 540/7, generally requires that when a Contractor receives any payment from the Department, the Contractor is required to make corresponding, proportional payments to each subcontractor performing work within 15 calendar days after receipt of the state payment. Section 7 of the State Prompt Payment Act further provides that interest in the amount of 2% per month, in addition to the payment due, shall be paid to any subcontractor by the Contractor if the payment required by the Act is withheld or delayed without reasonable cause. The Act also provides that the time for payment required and the calculation of any interest due applies to transactions between subcontractors and lower-tier subcontractors throughout the contracting chain.

This Special Provision establishes the required federal contract clause, and adopts the 15 calendar day requirement of the Act for purposes of compliance with the federal regulation regarding payments to subcontractors. This contract is subject to the following payment obligations.

As progress payments are made to the Contractor in accordance with Article 109.07 of the Standard Specifications for Road and Bridge Construction, the Contractor shall make a corresponding partial payment within 15 calendar days to each subcontractor in proportion to the work satisfactorily completed by each subcontractor. The proportionate amount of partial payment due to each subcontractor shall be determined by the quantities measured or otherwise determined as eligible for payment by the Department and included in the progress payment to the Contractor. Subcontractors shall be paid in full within 15 calendar days after the subcontractor's work has been satisfactorily completed. The Contractor shall hold no retainage from the subcontractors.

This Special Provision does not create any rights in favor of any subcontractor against the State of Illinois or authorize any cause of action against the State of Illinois on account of any payment, nonpayment, delayed payment or interest claimed by application of the State Prompt Payment Act. The Department will neither determine the reasonableness of any cause for delay of payment nor enforce any claim to payment, including interest. Moreover, the Department will not approve any delay or postponement of the 15 day requirement. State law creates remedies available to any subcontractor or material supplier, regardless of tier, who has not been paid for work properly performed or material furnished. These remedies are a lien against public funds set forth in Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c), and a recovery on the Contractor's payment bond in accordance with the Public Construction Bond Act, 30 ILCS 550.

Partial Payments

Effective: September 1, 2003

Revise Article 109.07 of the Standard Specifications to read:

"**109.07 Partial Payments.** Partial payments will be made as follows:

(a) Progress Payments. At least once each month, the Engineer will make a written estimate of the amount of work performed in accordance with the contract, and the value thereof at the contract unit prices. The amount of the estimate approved as due for payment will be vouchered by the Department and presented to the State Comptroller for payment. No amount less than $1000.00 will be approved for payment other than the final payment.

The failure to perform any requirement, obligation, or term of the contract by the Contractor shall be reason for withholding any progress payments until the Department determines that compliance has been achieved. Furthermore, progress payments may be reduced by liens filed pursuant to Section 23(c) of the Mechanics Lien Act, 770 ILCS 60/23(c).

(b) Material Allowances. At the discretion of the Department, payment may be made for materials, prior to their use in the work, when satisfactory evidence is presented by the Contractor. Satisfactory evidence includes justification for the allowance (to expedite the work, meet project schedules, regional or national material shortages, etc.), documentation of material and transportation costs, and evidence that such material is properly stored on the project or at a secure location acceptable and accessible to the Department.

Material allowances will be considered only for nonperishable materials when the cost, including transportation, exceeds $10,000 and such materials are not expected to be utilized within 60 days of the request for the allowance. For contracts valued under $500,000, the minimum $10,000 requirement may be met by combining the principal (material) product of no more than two contract items. An exception to this two item limitation may be considered for any contract regardless of value for items in which material (products) are similar except for type and/or size.

Material allowances shall not exceed the value of the contract items in which used and shall not include the cost of installation or related markups. Amounts paid by the Department for material allowances will be deducted from estimates due the Contractor as the material is used. Two-sided copies of the Contractor's cancelled checks for materials and transportation must be furnished to the Department within 60 days of payment of the allowances or the amounts will be reclaimed by the Department."

RAILROAD PROTECTIVE LIABILITY INSURANCE

Effective: 12-1-86
Revised: 5-15-88

RAILROAD PROTECTIVE LIABILITY INSURANCE: The contractor will be required to carry Railroad Protective Liability and Property Damage Liability Insurance in accordance with Article 107.11 of the Standard Specifications. The limits of liability shall be in accordance with Article 107.11 of the Standard Specifications unless otherwise noted. A separate policy is required for each railroad indicated below unless otherwise noted.

NAMED INSURED & ADDRESS	NUMBER & SPEED OF PASSENGER TRAINS	NUMBER & SPEED OF FREIGHT TRAINS
Union Pacific Railroad Co. Contracts & Real Estate Department 1416 Dodge Street WP001 Omaha, NE 68179	6 @ 79 mph	10 @ 79 mph

FOR FREIGHT/PASSENGER INFORMATION CONTACT: Track Manager Phone: 309-828-0282

FOR INSURANCE INFORMATION CONTACT: UPRR Insurance Department Phone: 402-271-2215

FOR FREIGHT/PASSENGER INFORMATION CONTACT: _____ Phone: _____

FOR INSURANCE INFORMATION CONTACT: _____ Phone: _____

FOR FREIGHT/PASSENGER INFORMATION CONTACT: _____ Phone: _____

FOR INSURANCE INFORMATION CONTACT: _____ Phone: _____

Basis of Payment: The costs for providing insurance, as noted above, will be paid for at the contract unit price per Lump Sum for RAILROAD PROTECTIVE LIABILITY INSURANCE.

APPROVAL OF INSURANCE: The ORIGINAL and one CERTIFIED copy of each required policy shall be submitted to:

*Engineer of Design and Environment
Illinois Department of Transportation
2300 South Dirksen Parkway
Springfield, Illinois 62764

for approval. The contractor will be advised when approval of the insurance has been received from the railroad(s). Before any work begins on railroad right-of-way, the Contractor shall submit to the Resident Engineer evidence that the required railroad protective liability insurance has been approved by the railroad(s). The Contractor shall also provide the Resident Engineer with expiration date of each required policy.

TRAFFIC CONTROL DEFICIENCY DEDUCTION (BDE)

Effective: April 1, 1992
Revised: January 1, 2003

To ensure a prompt response to incidents involving the integrity of work zone traffic control, the Contractor shall provide a telephone number where a responsible individual can be contacted 24 hours-a-day.

When the Engineer is notified, or determines a traffic control deficiency exists, he/she will notify and direct the Contractor to correct the deficiency within a specified time. The specified time, which begins upon notification to the Contractor, will be from 1/2 hour to 12 hours based upon the urgency of the situation and the nature of the deficiency. The Engineer shall be the sole judge.

The deficiency may be any lack of repair, maintenance or non-compliance with the traffic control plan.

If the Contractor fails to correct the deficiency within the specified time, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The calendar day(s) will begin with notification to the Contractor and end with the Engineer's acceptance of the correction. The daily monetary deduction will be either $1,000 or 0.05 percent of the awarded contract value, whichever is greater.

In addition, if the Contractor fails to respond, the Engineer may correct the deficiency and the cost thereof will be deducted from monies due or which may become due the Contractor. This corrective action will in no way relieve the Contractor of his/her contractual requirements or responsibilities.

Weight Control Deficiency Deduction

Effective: April 1, 2001
Revised: August 1, 2002

The Contractor shall provide accurate weights of materials delivered to the contract for incorporation into the work (whether temporary or permanent) and for which the basis of payment is by weight. These weights shall be documented on delivery tickets which shall identify the source of the material, type of material, the date and time the material was loaded, the contract number, the net weight, the tare weight when applicable and the identification of the transporting vehicle. For aggregates, the Contractor shall have the driver of the vehicle furnish or establish an acceptable alternative to provide the contract number and a copy of the material order to the source for each load. The source is defined as that facility that produces the final material product that is to be incorporated into the contract pay items.

The Department will conduct random, independent vehicle weight checks for material sources according to the procedures outlined in the Documentation Section Policy Statement of the Department's Construction Manual and hereby incorporated by reference. The results of the independent weight checks shall be applicable to all contracts containing this Special Provision. Should the vehicle weight check for a source result in the net weight of material on the vehicle exceeding the net weight of material shown on the delivery ticket by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. No adjustment in pay quantity will be made. Should the vehicle weight check for a source result in the net weight of material shown on the delivery ticket exceeding the net weight of material on the vehicle by 0.50% (0.70% for aggregates) or more, the Engineer will document the independent vehicle weight check and immediately furnish a copy of the results to the Contractor. The Engineer will adjust the net weight shown on the delivery ticket to the checked delivered net weight as determined by the independent vehicle weight check.

The Engineer will also adjust the method of measurement for all contracts for subsequent deliveries of all materials from the source based on the independent weight check. The net weight of all materials delivered to all contracts containing this Special Provision from this source, for which the basis of payment is by weight, will be adjusted by applying a correction factor "A" as determined by the following formula:

$$A = 1.0 - \left(\frac{B-C}{B}\right); \text{ Where } A \le 1.0; \left(\frac{B-C}{C}\right) > 0.50\% \text{ (0.70\% for aggregates)}$$

Where A = Adjustment factor
B = Net weight shown on delivery ticket
C = Net weight determined from independent weight check

The adjustment factor will be applied as follows:

Adjusted Net Weight = A x Delivery Ticket Net Weight

The adjustment factor will be imposed until the cause of the deficient weight is identified and corrected by the Contractor to the satisfaction of the Engineer. If the cause of the deficient weight is not identified and corrected within seven (7) calendar days, the source shall cease delivery of all materials to all contracts containing this Special Provision for which the basis of payment is by weight.

Should the Contractor elect to challenge the results of the independent weight check, the Engineer will continue to document the weight of material for which the adjustment factor would be applied. However, provided the Contractor furnishes the Engineer with written documentation that the source scale has been calibrated within seven (7) calendar days after the date of the independent weight check, adjustments in the weight of material paid for will not be applied unless the scale calibration demonstrates that the source scale was not within the specified Department of Agriculture tolerance.

At the Contractor's option, the vehicle may be weighed on a second independent Department of Agriculture certified scale to verify the accuracy of the scale used for the independent weight check.

Erosion and Sediment Control Deficiency Deduction

Effective: August 1, 2001
Revised: November 1, 2001

When the Engineer is notified or determines an erosion and/or sediment control deficiency(s) exists, he/she will direct the Contractor in writing to correct the deficiency. The Contractor shall then correct the deficiency within 24 hours. The deficiency may be any lack of repair, maintenance, or implementation of erosion and/or sediment control devices included in the contract, or any failure to comply with the conditions of the National Pollutant Discharge Elimination System (NPDES) Storm Water Permit for Construction Site Activities.

If the Contractor fails to correct the deficiency(s) within 24 hours, a daily monetary deduction will be imposed for each calendar day or fraction thereof the deficiency exists. The time period will begin with the initial written notification to the Contractor and end with the Engineer's acceptance of the corrected work. The per calendar day deduction will be either $1000.00 or 0.05 percent of the awarded contract value, whichever is greater.

If the Contractor fails to respond, the Engineer may correct the deficiencies and deduct the cost from monies due or which may become due the Contractor. This corrective action shall in no way relieve the Contractor of his/her contractual requirements or responsibilities.

Subgrade Preparation

Effective: November 1, 2002

Revise the tenth paragraph of Article 301.03 of the Standard Specifications to read:

"Equipment of such weight, or used in such a way as to cause a rut in the finished subgrade of 13 mm (1/2 in.) or more in depth, shall be removed from the work or the rutting otherwise prevented."

Superpave Bituminous Concrete Mixtures

Effective: January 1, 2000
Revised: January 1, 2004

Description. This work shall consist of designing, producing and constructing Superpave bituminous concrete mixtures using Illinois Modified Strategic Highway Research Program (SHRP) Superpave criteria. This work shall be according to Sections 406 and 407 of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures", except as follows.

Materials.

(a) Fine Aggregate Blend Requirement. The Contractor may be required to provide FA 20 manufactured sand to meet the design requirements. For mixtures with Ndesign ≥ 90, at least 50 percent of the required fine aggregate fraction shall consist of either stone sand, slag sand, or steel slag sand meeting the FA/FM 20 gradation.

(b) Reclaimed Asphalt Pavement (RAP). If the Contractor is allowed to use more than 15 percent RAP, as specified in the plans, a softer performance-graded binder may be required as determined by the Engineer.

RAP shall meet the requirements of the special provision, "RAP for Use in Bituminous Concrete Mixtures".

RAP will not be permitted in mixtures containing polymer modifiers.

RAP containing steel slag will be permitted for use in top-lift surface mixtures only.

(c) Bituminous Material. The asphalt cement (AC) shall be performance-graded (PG) or polymer modified performance-graded (SBS-PG or SBR-PG) meeting the requirements of Article 1009.05 of the Standard Specifications for the grade specified on the plans.

The following additional guidelines shall be used if a polymer modified asphalt is specified:

(1) The polymer modified asphalt cement shall be shipped, maintained, and stored at the mix plant according to the manufacturer's requirements. Polymer modified asphalt cement shall be placed in an empty tank and shall not be blended with other asphalt cements.

(2) The mixture shall be designed using a mixing temperature of 163 ± 3 °C (325 ± 5 °F) and a gyratory compaction temperature of 152 ± 3 °C (305 ± 5 °F).

(3) Pneumatic-tired rollers will not be allowed unless otherwise specified by the Engineer. A vibratory roller meeting the requirements of Article 406.16 of the Standard Specifications shall be required in the absence of the pneumatic-tired roller.

(4) A manufacturer's representative from the polymer asphalt cement producer shall be present during each polymer mixture start-up and shall be available at all times during production and lay-down of the mix.

Laboratory Equipment.

(a) Superpave Gyratory Compactor. The superpave gyratory compactor (SGC) shall be used for all QC/QA testing.

(b) Ignition Oven. The ignition oven shall be used to determine the AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations.

The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the ignition oven requirement is waived, other Department approved methods shall be used to determine the AC content.

Mixture Design. The Contractor shall submit mix designs, for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have successfully completed the course, "Superpave Mix Design Upgrade". Articles 406.10 and 406.13 of the Standard Specifications shall not apply. The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below.

AASHTO MP 2	Standard Specification for Superpave Volumetric Mix Design
AASHTO PP 2	Standard Practice for Short and Long Term Aging of Hot Mix Asphalt (HMA)
AASHTO PP 19	Standard Practice for Volumetric Analysis of Compacted Hot Mix Asphalt (HMA)
AASHTO PP 28	Standard Practice for Designing Superpave HMA
AASHTO T 209	Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures
AASHTO T 312	Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor
AASHTO T 308	Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

(a) Mixture Composition. The ingredients of the bituminous mixture shall be combined in such proportions as to produce a mixture conforming to the composition limits by weight. The gradation mixture specified on the plans shall produce a mixture falling within the limits specified in Table 1.

TABLE 1. MIXTURE COMPOSITION (% PASSING)[1/]								
Sieve Size	IL-25.0 mm		IL-19.0 mm		IL-12.5 mm[4/]		IL-9.5 mm[4/]	
	min	max	min	max	min	max	min	max
37.5 mm (1 1/2 in.)		100						
25 mm (1 in.)	90	100		100				
19 mm (3/4 in.)		90	82	100		100		
12.5 mm (1/2 in.)	45	75	50	85	90	100		100
9.5 mm (3/8 in.)						90	90	100
4.75 mm (#4)	24	42[2/]	24	50[2/]	24	65	24	65
2.36 mm (#8)	16	31	16	36	16	48[3/]	16	48[3/]
1.18 mm (#16)	10	22	10	25	10	32	10	32
600 μm (#30)								
300 μm (#50)	4	12	4	12	4	15	4	15
150 μm (#100)	3	9	3	9	3	10	3	10
75 μm (#200)	3	6	3	6	4	6	4	6

1/ Based on percent of total aggregate weight.

2/ The mixture composition shall not exceed 40 percent passing the 4.75 mm (#4) sieve for binder courses with Ndesign ≥ 90.

3/ The mixture composition shall not exceed 40 percent passing the 2.36 mm (#8) sieve for surface courses with Ndesign ≥ 90.

4/ The mixture composition for surface courses shall be according to IL-12.5 mm or IL-9.5 mm, unless otherwise specified by the Engineer.

One of the above gradations shall be used for leveling binder as specified in the plans and according to Article 406.04 of the Standard Specifications.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

(b) Dust/AC Ratio for Superpave. The ratio of material passing the 75 μm (#200) sieve to total asphalt cement shall not exceed 1.0 for mixture design (based on total weight of mixture).

(c) Volumetric Requirements. The target value for the air voids of the hot mix asphalt (HMA) shall be 4.0 percent at the design number of gyrations. The VMA and VFA of the HMA design shall be based on the nominal maximum size of the aggregate in the mix and shall conform to the requirements listed in Table 2.

TABLE 2. VOLUMETRIC REQUIREMENTS

	Voids in the Mineral Aggregate (VMA), % minimum				Voids Filled with Asphalt (VFA), %
Ndesign	IL-25.0	IL-19.0	IL-12.5	IL-9.5	
50	12.0	13.0	14.0	15	65 - 78
70					65 - 75
90					
105					

(d) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified T 283 using 4 in. Marshall bricks. To be considered acceptable by the Department as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSRs) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSRs less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Department. The method of application shall be according to Article 406.12 of the Standard Specifications.

Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

Required Plant Tests. Testing shall be conducted to control the production of the bituminous mixture. The Contractor shall use the test methods identified to perform the following mixture tests at a frequency not less than that indicated in Table 3.

TABLE 3. REQUIRED PLANT TESTS for SUPERPAVE			
Parameter		**Frequency of Tests**	**Test Method**
Asphalt Content by Ignition Oven		1 per half day of production	Illinois Modified AASHTO T 308
Air Voids	Bulk Specific Gravity of Gyratory Sample	1 per half day of production for first 2 days and 1 per day thereafter (first sample of the day)	Illinois Modified AASHTO T 312
	Maximum Specific Gravity of Mixture		Illinois Modified AASHTO T 209

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.2 and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resuming production.

During production, mixtures containing an anti-stripping additive will be tested by the Department for stripping according to Illinois Modified T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

Construction Requirements

Lift Thickness.

(a) Binder and Surface Courses. The minimum compacted lift thickness for constructing bituminous concrete binder and surface courses shall be according to Table 4:

TABLE 4 – MINIMUM COMPACTED LIFT THICKNESS	
Mixture	Thickness, mm (in.)
IL-9.5	32 (1 1/4)
IL-12.5	38 (1 1/2)
IL-19.0	57 (2 1/4)
IL-25.0	76 (3)

(b) Leveling Binder. Mixtures used for leveling binder shall be as follows:

TABLE 5 – LEVELING BINDER	
Nominal, Compacted, Leveling Binder Thickness, mm (in.)	Mixture
≤ 32 (1 1/4)	IL-9.5
32 (1 1/4) to 50 (2)	IL 9.5 or IL-12.5

Density requirements shall apply for leveling binder when the nominal, compacted thickness is 32 mm (1 1/4 in.) or greater for IL-9.5 mixtures and 38 mm (1 1/2 in.) or greater for IL-12.5 mixtures.

(c) Full-Depth Pavement. The compacted thickness of the initial lift of binder course shall be 100 mm (4 in.). The compacted thickness of succeeding lifts shall meet the minimums specified in Table 4 but not exceed 100 mm (4 in.).

If a vibratory roller is used for breakdown, the compacted thickness of the binder lifts, excluding the top lift, may be increased to 150 mm (6 in.) provided the required density is obtained.

(d) Bituminous Patching. The minimum compacted lift thickness for constructing bituminous patches shall be according to Table 4.

Control Charts/Limits. Control charts/limits shall be according to QC/QA Class I requirements, except density shall be plotted on the control charts within the following control limits:

TABLE 6. DENSITY CONTROL LIMITS	
Parameter	**Individual Test**
Ndesign ≥ 90	92.0 - 96.0%
Ndesign < 90	93 - 97%

Basis of Payment. On resurfacing projects, this work will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On resurfacing projects in which polymer modifiers are required, this work will be paid for at the contract unit price per metric ton (ton) for POLYMERIZED BITUMINOUS CONCRETE SURFACE COURSE, SUPERPAVE, of the friction aggregate mixture and Ndesign specified, POLYMERIZED LEVELING BINDER (HAND METHOD), SUPERPAVE, of the Ndesign specified, POLYMERIZED LEVELING BINDER (MACHINE METHOD), SUPERPAVE, of the Ndesign specified, and POLYMERIZED BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition and Ndesign specified.

On full-depth pavement projects, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE PAVEMENT, (FULL-DEPTH), SUPERPAVE, of the thickness specified.

On projects where widening is constructed and the entire pavement is then resurfaced, the binder for the widening will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE BINDER COURSE, SUPERPAVE, of the mixture composition, Ndesign, and thickness specified. The surface and binder used to resurface the entire pavement will be paid for according to the paragraphs above for resurfacing projects.

RAP for Use in Bituminous Concrete Mixtures

Effective: January 1, 2000
Revised: April 1, 2002

Revise Article 1004.07 to read:

"**1004.07 RAP Materials.** RAP is reclaimed asphalt pavement resulting from cold milling or crushing of an existing dense graded hot-mix asphalt pavement. RAP must originate from routes or airfields under federal, state or local agency jurisdiction. The Contractor shall supply documentation that the RAP meets these requirements.

(a) Stockpiles. The Contractor shall construct individual, sealed RAP stockpiles meeting one of the following definitions. No additional RAP will be allowed on top of the pile after the pile has been sealed.

(1) Homogeneous. Homogeneous RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only and represent the same aggregate quality, but shall be at least C quality or better, the same type of crushed aggregate (either crushed natural aggregate, ACBF slag, or steel slag), similar gradation and similar AC content. If approved by the Engineer, combined single pass surface/binder millings may be considered "homogenous", with a quality rating dictated by the lowest coarse aggregate quality present in the mixture. Homogenous stockpiles shall meet the requirements of Article 1004.07(d). Homogeneous RAP stockpiles not meeting these requirements may be processed (crushing and screening) and retested.

(2) Conglomerate. Conglomerate RAP stockpiles shall consist of RAP from Class I/ Superpave, or equivalent mixtures only. The coarse aggregate in this RAP shall be crushed aggregate only and may represent more than one aggregate type and/or quality but shall be at least C quality or better. This RAP may have an inconsistent gradation and/or asphalt cement content prior to processing. All conglomerate RAP shall be processed prior to testing by crushing to where all RAP shall pass the 16 mm (5/8 in.) or smaller screen. Conglomerate RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate RAP stockpiles shall meet the requirements of Article 1004.07(d).

(3) Conglomerate "D" Quality (DQ). Conglomerate DQ RAP stockpiles shall consist of RAP containing coarse aggregate (crushed or round) that is at least D quality or better. This RAP may have an inconsistent gradation and/or asphalt content. Conglomerate DQ RAP stockpiles shall not contain steel slag or other expansive material as determined by the Department. Conglomerate DQ RAP shall meet the requirements of Article 1004.07(d).

Reclaimed Superpave Low ESAL IL-9.5L surface mixtures shall only be placed in conglomerate DQ RAP stockpiles due to the potential for rounded aggregate.

(4) Other. RAP stockpiles that do not meet the requirements of the stockpile categories listed above shall be classified as "Other". "Other" RAP stockpiles shall not be used in any of the Department's bituminous mixtures.

(b) Use. The allowable use of a RAP stockpile shall be set by the lowest quality of coarse aggregate in the RAP stockpile. Class I/Superpave surface mixtures are designated as containing Class B quality coarse aggregate only. Superpave Low ESAL IL-19.0L binder and IL-9.5L surface mixtures are designated as Class C quality coarse aggregate only. Class I/Superpave binder mixtures, bituminous base course mixtures, and bituminous base course widening mixtures are designated as containing Class C quality coarse aggregate only. Bituminous stabilized subbase and BAM shoulders are designated as containing Class D quality coarse aggregate only. Any mixture not listed above shall have the designated quality determined by the Department.

RAP containing steel slag or other expansive material, as determined by the Department, shall be homogeneous and will be approved for use in Class I/Superpave (including Low ESAL) surface mixtures only. RAP stockpiles for use in Class I/Superpave mixtures (including Low ESAL), base course, base course widening and Class B mixtures shall be either homogeneous or conglomerate RAP stockpiles except conglomerate RAP stockpiles shall not be used in Superpave surface mixture Ndesign 50 or greater. RAP for use in bituminous aggregate mixtures (BAM) shoulders and BAM stabilized subbase shall be from homogeneous, conglomerate, or conglomerate DQ stockpiles.

Additionally, RAP used in Class I/Superpave surface mixtures shall originate from milled or crushed mixtures only, in which the coarse aggregate is of Class B quality or better. RAP stockpiles for use in Class I/Superpave (including Low ESAL) binder mixes as well as base course, base course widening and Class B mixtures shall originate from milled or processed surface mixture, binder mixture, or a combination of both mixtures uniformly blended to the satisfaction of the Engineer, in which the coarse aggregate is of Class C quality or better.

(c) Contaminants. RAP containing contaminants, such as earth, brick, sand, concrete, sheet asphalt, bituminous surface treatment (i.e. chip seal), pavement fabric, etc., will be unacceptable unless the contaminants are removed to the satisfaction of the Engineer. Sheet asphalt shall be stockpiled separately.

(d) Testing. All RAP shall be sampled and tested either during or after stockpiling.

For testing during stockpiling, washed extraction samples shall be run at the minimum frequency of one sample per 450 metric tons (500 tons) for the first 1800 metric tons (2,000 tons) and one sample per 1800 metric tons (2,000 tons) thereafter. A minimum of five tests shall be required for stockpiles less than 3600 metric tons (4,000 tons).

For testing existing stockpiles, the Contractor shall submit a plan for approval to the District proposing a satisfactory method of sampling and testing the RAP pile either in-situ or by restockpiling. The sampling plan shall meet the minimum frequency required above and detail the procedure used to extract representative samples throughout the pile for testing.

Before extraction, each field sample shall be split to test sample size. One of the two test samples from the final split shall be labeled and stored for Department use. The Contractor shall extract the other test sample according to Department procedure. The Engineer reserves the right to test any sample (split or Department-taken) to verify Contractor test results.

All of the extraction results shall be compiled and averaged for asphalt content and gradation. Individual extraction test results, when compared to the averages, will be accepted if within the tolerances listed below.

Parameter	Homogeneous / Conglomerate	Conglomerate "D" Quality
25 mm (1 in.)		± 5%
12.5 mm (1/2 in.)	± 8%	± 15%
4.75 mm (No. 4)	± 6%	± 13%
2.36 mm (No. 8)	± 5%	
1.18 mm (No. 16)		± 15%
600 µm (No. 30)	± 5%	
75 µm (No. 200)	± 2.0%	± 4.0%
AC	± 0.4%	± 0.5%

If more than 20 percent of the individual sieves are out of the gradation tolerances, or if more than 20 percent of the asphalt content test results fall outside the appropriate tolerances, the RAP will not be allowed to be used in the Department's bituminous concrete mixtures unless the RAP representing the failing tests is removed from the stockpile to the satisfaction of the Engineer. All test data and acceptance ranges shall be sent to the District for evaluation.

With the approval of the Engineer, the ignition oven may be substituted for extractions according to the Illinois Test Procedure, "Calibration of the Ignition Oven for the Purpose of Characterizing Reclaimed Asphalt Pavement (RAP)".

(e) Designs. At the Contractor's option, bituminous concrete mixtures may be constructed utilizing RAP material meeting the above detailed requirements. The amount of RAP included in the mixture shall not exceed the percentages specified in the plans.

RAP designs shall be submitted for volumetric verification. If additional RAP stockpiles are tested and found that no more than 20 percent of the results, as defined under "Testing" herein, are outside of the control tolerances set for the original RAP stockpile and design, and meets all of the requirements herein, the additional RAP stockpiles may be used in the original mix design at the percent previously verified.

(f) Production. The coarse aggregate in all RAP used shall be equal to or less than the nominal maximum size requirement for the bituminous mixture being produced.

To remove or reduce agglomerated material, a scalping screen, crushing unit or comparable sizing device approved by the Engineer shall be used in the RAP feed system to remove or reduce oversized material. If material passing the sizing device adversely affects the mix production or quality of the mix, the sizing device shall be set at a size specified by the Engineer.

If the RAP control tolerances or QC/QA test results require corrective action, the Contractor shall cease production of the mixture containing RAP and either switch to the virgin aggregate design or submit a new RAP design.

Bituminous Concrete Surface Course

Effective: April 1, 2001
Revised: April 1, 2003

Replace the fourth paragraph of Article 406.23(b) of the Standard Specifications with the following:

"Mixture for cracks, joints, flangeways, leveling binder (machine method), leveling binder (hand method) and binder course in excess of 103 percent of the quantity specified by the Engineer will not be measured for payment.

Surface course mixture in excess of 103 percent of adjusted plan quantity will not be measured for payment. The adjusted plan quantity for surface course mixtures will be calculated as follows:

Adjusted Plan Quantity = C x quantity shown on the plans or as specified by the Engineer.

where C = metric: $C = \frac{G_{mb} \times 24.99}{U}$ English: $C = \frac{G_{mb} \times 46.8}{U}$

and where:

G_{mb} = average bulk specific gravity from approved mix design.
U = Unit weight of surface course shown on the plans in kg/sq m/25 mm (lb/sq yd/in.), used to estimate plan quantity.
24.99 = metric constant.
46.8 = English constant.

If project circumstances warrant a new surface course mix design, the above equations shall be used to calculate the adjusted plan quantity for each mix design using its respective average bulk specific gravity."

Coarse Aggregate for Trench Backfill, Backfill and Bedding

Effective: April 1, 2001
Revised: November 1, 2003

Revise Article 208.02 of the Standard Specifications to read:

"**208.02 Materials.** Materials shall be according to the following Articles of Section 1000 – Materials:

(a) Fine Aggregate (Note 1) 1003.04
(b) Coarse Aggregate (Note 2) 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first sentence of the second paragraph of subparagraph (b) in Article 208.03 of the Standard Specifications to read:

"Any material meeting the requirements of Articles 1003.04 or 1004.06 which has been excavated from the trenches shall be used for backfilling the trenches."

Add the following to the end of Article 542.02 of the Standard Specifications:

"(bb) Fine Aggregate (Note 1) 1003.04
(cc) Coarse Aggregate (Note 2) 1004.06

Note 1. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 2. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first and second sentences of the second paragraph of subparagraph (a) of Article 542.04 of the Standard Specifications to read:

"The unstable and unsuitable material shall be removed to a depth determined by the Engineer and for a width of one diameter (or equivalent diameter) of the pipe on each side of the pipe culvert, and replaced with aggregate. Rock shall be removed to an elevation 300 mm (1 ft) lower than the bottom of the pipe or to a depth equal to 40 mm/m (1/2 in./ft) of ultimate fill height over the top of the pipe culvert, whichever is the greater depth, and for a width as specified in (b) below, and replaced with aggregate."

Revise the second paragraph of subparagraph (c) of Article 542.04 of the Standard Specifications to read:

"Well compacted aggregate, at least 100 mm (4 in.) in depth below the pipe culvert, shall be placed the entire width of the trench and for the length of the pipe culvert, except well compacted impervious material shall be used for the outer 1 m (3 ft) at each end of the pipe.

When the trench has been widened by the removal and replacement of unstable or unsuitable material, the foundation material shall be placed for a width not less than the above specified widths on each side of the pipe. The aggregate and impervious material shall be approved by the Engineer and shall be compacted to the Engineer's satisfaction by mechanical means."

Revise subparagraph (e) of Article 542.04 of the Standard Specifications to read:

"(e) Backfilling. As soon as the condition of the pipe culvert will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe culvert, except at the outer 1 m (3 ft) at each end of the culvert which shall be backfilled with impervious material. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate and impervious material shall be placed in 200 mm (8 in.) layers, loose measurement. When using PVC, PE, or corrugated metal pipe, the aggregate shall be continued to a height of at least 300 mm (1 ft) above the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means. When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

When using PVC, PE, or corrugated metal pipe a minimum of 300 mm (1 ft) of cover from the top of the pipe to the top of the subgrade will be required.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench shall be backfilled with select material, from excavation or borrow, free from large or frozen lumps, clods or rock, meeting the approval of the Engineer. The material shall be placed in layers not exceeding 200 mm (8 in.) in depth, loose measurement and compacted to 95 percent of the standard laboratory density. Compaction shall be obtained by use of mechanical tampers or with approved vibratory compactors. Before compacting, each layer shall be wetted or dried to bring the moisture content within the limits of 80 to 110 percent of optimum moisture content determined according to AASHTO T 99 (Method C). All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the culvert. The filling of the trench shall be carried on simultaneously on both sides of the pipe. The Contractor may, at his/her expense, backfill the entire trench with aggregate in lieu of select material. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means.

The backfill material for all trenches and excavations made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder, or sidewalk shall be according to Section 208. The trench backfill material shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When the trench has been widened for the removal and replacement of unstable or unsuitable material, the backfilling with aggregate and impervious material, will be required for a width of at least the specified widths on each side of the pipe. The remaining width of each layer may be

backfilled with select material. Each 200 mm (8 in.) layer for the entire trench width shall be completed before beginning the placement of the next layer."

Revise subparagraph (b) of Article 542.05 of the Standard Specifications to read:

"(b) Embankment. Embankment extending to an elevation of 300 mm (1 ft) over the top of the pipe shall be constructed according to Article 542.04(f), except the material up to the elevation of the center of the pipe and extending to a width of at least 450 mm (18 in.) on each side of the pipe, exclusive of the outer 1 m (3 ft) at each end of the pipe, shall consist of aggregate. At the outer 1 m (3 ft) at each end of the culvert, impervious material shall be used."

Add the following paragraph after the first paragraph of Article 542.10 of the Standard Specifications:

"Trench backfill will be measured for payment according to Article 208.03."

Add the following paragraph after the third paragraph of Article 542.11 of the Standard Specifications:

"Trench backfill will be paid for according to Article 208.04."

Add the following to of Article 550.02 of the Standard Specifications:

"(m) Fine Aggregate (Note 2) 1003.04
(n) Coarse Aggregate (Note 3) 1004.06

Note 2. The fine aggregate shall be moist to the satisfaction of the Engineer.

Note 3. The coarse aggregate shall be wet to the satisfaction of the Engineer."

Revise the first two sentences of the third paragraph of Article 550.04 of the Standard Specifications to read:

"Well compacted, aggregate bedding material at least 100 mm (4 in.) in depth below the pipe, shall be placed for the entire width of the trench and length of the pipe. The aggregate shall be compacted to the satisfaction of the Engineer by mechanical means."

Revise Article 550.07 of the Standard Specifications to read:

"550.07 Backfilling. As soon as the condition of the pipe will permit, the entire width of the trench shall be backfilled with aggregate to a height of at least the elevation of the center of the pipe. The aggregate shall be placed longitudinally along the pipe. The elevation of the backfill material on each side of the pipe shall be the same. The space under the pipe shall be completely filled. The aggregate backfill material shall be placed in 200 mm (8 in.) layers, loose measurement and compacted to the satisfaction of the Engineer by mechanical means. When using PVC pipe, the aggregate shall be continued to a height of at least 300 mm (12 in.) above the top of the pipe.

The installed pipe and its embedment shall not be disturbed when using movable trench boxes and shields, sheet pile, or other trench protection.

The remainder of the trench and excavation shall be backfilled to the natural line or finished surface as rapidly as the condition of the sewer will permit. The backfill material shall consist of suitable excavated material from the trench or of trench backfill as herein specified. All backfill material shall be deposited in the trench or excavation in such a manner as not to damage the sewer and shall be compacted to the satisfaction of the Engineer by mechanical means. The filling of the trench shall be carried on simultaneously on both sides of the pipe.

The backfill material for trenches and excavation made in the subgrade of the proposed improvement, and for all trenches outside of the subgrade where the inner edge of the trench is within 600 mm (2 ft) of the edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk shall be according to Section 208. The backfill material shall be compacted to 85 percent of standard lab density by mechanical means.

All backfill material up to a height of 300 mm (1 ft) above the pipe shall be deposited in uniform layers not exceeding 200 mm (8 in.) thick, loose measurement. The material in each layer shall be compacted to the satisfaction of the Engineer by mechanical means. The backfilling above this height shall be done according to Method 1, 2 or 3 as described below, with the following exceptions.

When trench backfill or excavated material meeting the requirements of Section 208 is required above the first 300 mm (1 ft) of the pipe, the layers shall not exceed 200 mm (8 in.). Gradations CA6 or CA10 shall not be used with Method 2 or Method 3.

Method 1. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be compacted to the satisfaction of the Engineer by mechanical means.

Method 2. The material shall be deposited in uniform layers not exceeding 300 mm (1 ft) thick, loose measurement, and each layer shall be either inundated or deposited in water.

Method 3. The trench shall be backfilled with loose material, and settlement secured by introducing water through holes jetted into the backfill to a point approximately 600 mm (2 ft) above the top of the pipe. The holes shall be spaced as directed by the Engineer but shall be no farther than 2 m (6 ft) apart.

The water shall be injected at a pressure just sufficient to sink the holes at a moderate rate of speed. The pressure shall be such that the water will not cut cavities in the backfill material nor overflow the surface. If water does overflow the surface, it shall be drained into the jetted holes by means of shallow trenches.

Water shall be injected as long as it will be absorbed by the backfill material and until samples taken from test holes in the trench show a satisfactory moisture content. The Contractor shall bore the test holes not more than 15 m (50 ft) apart and at such other locations in the trench designated by the Engineer. As soon as the watersoaking has been completed, all holes shall be filled with soil and compacted by ramming with a tool approved by the Engineer.

Backfill material which has been watersoaked shall be allowed to settle and dry for at least 10 days before any surface course or pavement is constructed on it. The length of time may be altered, if deemed desirable, by the Engineer. Where the inner edge of the trench is within 600 mm (2 ft) of the

edge of the proposed pavement, curb, gutter, curb and gutter, stabilized shoulder or sidewalk, the provisions of this paragraph shall also apply.

At the end of the settling and drying period, the crusted top of the backfill material shall be scarified and, if necessary, sufficient backfill material added, as specified in Method 1, to complete the backfilling operations.

The method used for backfilling and compacting the backfill material shall be the choice of the Contractor. If the method used does not produce results satisfactory to the Engineer, the Contractor will be required to alter or change the method being used so the resultant backfill will be satisfactory to the Engineer. Should the Contractor be required to alter or change the method being used, no additional compensation will be allowed for altering or changing the method.

The Contractor may, at his/her expense, backfill the entire trench with controlled low strength material meeting the approval of the Engineer.

When sheeting and bracing have been used, sufficient bracing shall be left across the trench as the backfilling progresses to hold the sides firmly in place without caving or settlement. This bracing shall be removed as soon as practicable. Any depressions which may develop within the area involved in the construction operation due to settlement of the backfilling material shall be filled in a manner approved by the Engineer.

When the Contractor constructs the trench with sloped or benched sides according to Article 550.04, backfilling for the full width of the excavation shall be as specified, except no additional compensation will be allowed for trench backfill material required outside the vertical limits of the specified trench width.

Whenever excavation is made for installing sewer pipe across earth shoulders or private property, the topsoil disturbed by excavation operations shall be replaced as nearly as possible in its original position, and the whole area involved in the construction operations shall be left in a neat and presentable condition.

When using any PVC pipe, the pipe shall be backfilled with aggregate to 300 mm (1 ft) over the top of the pipe and compacted to a minimum of 85 percent of standard lab density by mechanical means.

When reinforced concrete pipes are used and the trench is within 600 mm (2 ft) of the pavement structure, the backfill shall be compacted to a minimum of 85 percent of standard lab density by mechanical means.

Deflection Testing for Storm Sewers. All PVC storm sewers will be tested for deflection not less than 30 days after the pipe is installed and the backfill compacted.

For PVC storm sewers with diameters 600 mm (24 in.) or smaller, a mandrel drag shall be used for deflection testing. For PVC storm sewers with diameters over 600 mm (24 in.), deflection measurements other than by a mandrel drag shall be used.

Where the mandrel is used, the mandrel shall be furnished by the Contractor and pulled by hand through the pipeline with a suitable rope or cable connected to each end. Winching or other means of forcing the deflection gauge through the pipeline will not be allowed.

The mandrel shall be of a shape similar to that of a true circle enabling the gauge to pass through a satisfactory pipeline with little or no resistance. The mandrel shall be of a design to prevent it from

tipping from side to side and to prevent debris build-up from occurring between the channels of the adjacent fins or legs during operation. Each end of the core of the mandrel shall have fasteners to which the pulling cables can be attached. The mandrel shall have 9, various sized fins or legs of appropriate dimension for various diameter pipes. Each fin or leg shall have a permanent marking that states its designated pipe size and percent of deflection allowable.

The outside diameter of the mandrel shall be 95 percent of the base inside diameter, where the base inside diameter is:

For all PVC pipe (as defined using ASTM D 3034 methodology):

If the pipe is found to have a deflection greater than specified, that pipe section shall be removed, replaced, and retested."

Revise subparagraph (c) of Article 1003.04 of the Standard Specifications to read:

"(c) Gradation. The fine aggregate gradation shall be as follows:

Backfill, bedding and trench backfill for pipe culverts and storm sewers	FA 1, FA 2, FA 6, or FA 21
Porous granular embankment and backfill, french drains, and sand backfill for underdrains	FA 1, FA 2, or FA20 (Note 1)

Note 1: For FA 1, FA 2, and FA 20 the percent passing the 75 μm (No. 200) sieve shall be 2 ± 2."

Revise the title of Article 1004.06 of the Standard Specifications to read:

"Coarse Aggregate for Blotter, Embankment, Backfill, Trench Backfill, French Drains, and Bedding."

Add the following to the end of subparagraph (c) of Article 1004.06 of the Standard Specifications:

"Backfill, bedding, and trench backfill for pipe culverts and storm sewers	CA 6, CA 10, and CA 18"

Expansion Joints

Effective: August 1, 2003

Add the following paragraph after the second paragraph of Article 420.10(e) of the Standard Specifications:

"After the dowel bars are oiled, plastic expansion caps shall be secured to the bars maintaining a minimum expansion gap of 50 mm (2 in.) between the end of the bar and the end of the cap. The caps shall fit snuggly on the bar and the closed end shall be watertight. For expansion joints formed using dowel bar basket assemblies, the caps shall be installed on the alternating free ends of the bars. For expansion joints formed using a construction header, the caps shall be installed on the exposed end of each bar once the header has been removed and the joint filler material has been installed."

Precast Concrete

Effective: July 1, 1999
Revised: January 1, 2002

Description. This special provision identifies non-prestressed, precast concrete products which shall be produced according to the Department's current, "Quality Control/Quality Assurance Program for Precast Concrete Products".

Products. The list of products is as follows:

Product Class	Precast Item
Box Culvert	Precast Concrete Box Culverts
Pipe	Reinforced Concrete Culvert, Storm Drain and Sewer Pipe
	Concrete Sewer, Storm Drain and Culvert Pipe
	Reinforced Concrete Elliptical Culvert, Storm Drain and Sewer Pipe
	Concrete Drain Tile
	Reinforced Concrete Arch Culvert, Storm Drain and Sewer Pipe
	Concrete Headwall for Pipe Drains
	Precast Reinforced Concrete Flared End Sections and Elliptical Flared End Sections
	Precast Reinforced Concrete Pipe Elbows, Tees and Collars
Structure	Precast Concrete Members
Block/Brick	Erosion Control: Concrete Block Riprap, Block Revetment Mat, and Articulated Block Mat
	Concrete Building Brick
	Concrete Masonry Units
Drainage Structure	Precast Reinforced Concrete Catch Basins, Manholes, Inlets, Miscellaneous Structures, Valve Vaults and Flat Slab Tops/Bottoms
Barrier	Concrete Barrier
	Temporary Concrete Barrier
Miscellaneous	Right of Way, Drainage, Section and Permanent Survey Markers, Bumper Blocks, Junction Boxes, and Handholes

For precast concrete products which are constructed according to AASHTO M 86, M 170, M 178, M 199, M 206, M 207, M 259, or M 273; portland or blended hydraulic cement shall be according to Article 1001.01 of the Standard Specifications, except the pozzolan constituent in the Type IP or Type I (PM) cement shall be fly ash. In addition, the minimum or maximum combination of a portland cement and a cementitious material shall be according to the AASHTO M specification. The cementitious material shall be according to Articles 1010.01, 1010.03, 1014.01, 1014.02, 1015.01, 1015.02, 1016.01 and 1016.02.

Acceptance. Products which have been lot or piece inspected and approved by the Department prior to July 1, 1999, will be accepted for use on this contract. Products produced on or after July 1, 1999, will be accepted only if produced according to the Department's current "Quality Control/Quality Assurance Program for Precast Concrete Products".

Flagger Vests

Effective: April 1, 2003

Revise the first sentence of Article 701.04(c)(1) of the Standard Specifications to read:

"The flagger shall be stationed to the satisfaction of the Engineer and be equipped with a fluorescent orange, fluorescent yellow/green or a combination of fluorescent orange and fluorescent yellow/green vest meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments and approved flagger traffic control signs conforming to Standard 702001 and Article 702.05(e)."

Revise Article 701.04(c)(6) of the Standard Specifications to read:

"(6) Nighttime Flagging. The flagger station shall be lit by additional overhead lighting other than streetlights. The flagger shall be equipped with a fluorescent orange or fluorescent orange and fluorescent yellow/green garment meeting the requirements of the American National Standards Institute specification ANSI/ISEA 107-1999 for Conspicuity Class 2 garments."

Placement of Arrow Boards

Effective: August 1, 2001

Add the following to Article 701.04 of the Standard Specifications:

"(g) Arrow Boards. Arrow boards shown on standards or in the plans at the beginning of tapers, shall be placed at the beginning of the taper or in the closed lane within the first 90 m (300 ft) of the taper."

Transient Voltage Surge Suppression

Effective: August 1, 2003

Revise the first paragraph of Article 1074.03(a)(4) of the Standard Specifications to read:

"(4) Transient Voltage Surge Suppression. The cabinet shall be provided with transient voltage surge suppression. Transient surge suppression unit leads shall be kept as short as possible and ground shall be made directly to the cabinet wall or ground plate as near as possible to the object being grounded. All transient surge suppression units shall be tested and certified as meeting this specification by an independent testing laboratory. One copy of each of the full testing report shall be submitted to the Engineer."

Revise Article 1074.03(a)(4)a. of the Standard Specifications to read:

"a. Surge Suppressor. The suppressor protecting the solid state controller, conflict monitor, and detection equipment shall consist of two stages: stage one which shall include a controller cabinet AC power protection assembly and stage two which shall include AC circuit protection.

The design of the stage one suppressor shall be modular and it shall be installed in such a way that it may be removed and replaced with the intersection under power and in flashing operation. It shall have a permanently mounted and wired base and a removable circuit package. The stage one suppressor shall have two LED failure indicators for power 'on' and suppression 'failure' and shall meet the following properties:

Stage One Suppressor	
Properties	Criteria
"Plug-in" suppression module	12 pin connector assembly
Clamp voltage	250 V at 20,000 A typical
Response time	Less than 5 nanoseconds
Maximum continuous service current	15 A at 120 VAC 60 Hz
High frequency noise attenuation	At least 50 dB at 100,000 Hz
Operating temperature	-40 °C (-40 °F) to 85 °C (185 °F)

If the controller assembly includes a system telemetry module or remote intersection monitor, the status of the stage one suppressor shall be continuously and remotely monitored by an appropriate alarm circuit.

The stage two, high speed, solid state, transient suppressor shall protect the system from transient over voltage without affecting power at the load. It shall suppress transients of either polarity and from either direction (source or load). The suppressor shall have a visual "on" indicator lamp when the unit is operating normally. It shall also have a UL plastic enclosure, a four position terminal strip for power connection, and it shall utilize silicon avalanche diode technology. The stage two suppressor shall meet the following properties:

Stage Two Suppressor	
Properties	Criteria
Nominal service voltage	120 V at 50/60 Hz
Maximum voltage protection level	±330 V
Minimum voltage protection level	±220 V ±5%
Minimum surge current rating	700 A
Stand by power	Less than 0.5 Watts
Hot to neutral leakage current at 120 V RMS	Less than 5μA
Maximum response time	5 nanoseconds
Operating and Storage temperature	-20 °C (-4 °F) to 50 °C (122 °F)"

Epoxy Coatings for Steel Reinforcement

Effective: April 1, 2003

Revise Article 1006.10(b)(2) of the Standard Specifications to read:

"(2) Epoxy Coated Reinforcement Bars. Epoxy coated reinforcement bars shall conform to the requirements of AASHTO M 284M (M 284), except:

a. The maximum thickness of epoxy coating on spiral reinforcement, coated after fabrication, shall be 0.5 mm (20 mils).

b. No more than eight of the holidays permitted shall be in any 300 mm (1 ft) of length for continuity of coating.

The epoxy coating applicator shall be certified under the Concrete Reinforcing Steel Institute's (CRSI) Epoxy Plant Certification Program.

The epoxy coater shall provide access for the Engineer at any time during production or shipping. Random bars may be checked at the epoxy coater's facility or the jobsite for coating uniformity, thickness and discontinuity; cracks on the bends; and other damaged areas. Upon request, the coater shall provide samples for testing by the Engineer.

Bars may be sheared or sawn to length after coating, provided end damage to coating does not extend more than 15 mm (1/2 in.) back and the cut end is patched before any visible oxidation appears. Flame cutting will not be permitted."

Add the following paragraph after the first paragraph of Article 1006.11(b) of the Standard Specifications:

"The epoxy coating applicator shall be certified under the Concrete Reinforcing Steel Institute's (CRSI) Epoxy Plant Certification Program."

Hand Vibrator

Effective: November 1, 2003

Add the following paragraph to Article 1103.17(a) of the Standard Specifications:

"The vibrator shall have a non-metallic head for areas containing epoxy coated reinforcement. The head shall be coated by the manufacturer. The hardness of the non-metallic head shall be less than the epoxy coated reinforcement, resulting in no damage to the epoxy coating. Slip-on covers will not be allowed."

Working Days

Effective: January 1, 2002

The Contractor shall complete the work within 140 working days.

Bituminous Base Course / Widening Superpave

Effective: April 1, 2002
Revised: January 1, 2003

Description. This work shall consist of constructing bituminous base course Superpave and bituminous concrete base course widening Superpave according to Sections 355 and 356 respectively, of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures" except as modified herein.

Revise Article 355.02(d) of the Standard Specifications to read:

"(d) RAP Material (Note3)"

Revise Note 2 of Article 355.02 of the Standard Specifications to read:

"Note 2. Unless otherwise specified on the plans, the bituminous material shall be performance graded (PG) asphalt cement (AC) , PG58-22. When more than 15 percent RAP is used, a softer PG binder may be required as determined by the Engineer. When the pavement has a structural number (D_t) of 3.00 or less, the low temperature grade of the asphalt cement shall be lowered one grade (i.e. PG58-28 replaces PG58-22)."

Add the following to the end Article 355.02 of the Standard Specifications:

"Note 3. RAP shall meet the requirements of the special provision "RAP for Use in Bituminous Concrete Mixtures"."

Add the following to Article 355.03 of the Standard Specifications:

"(k) Superpave Gyratory Compactor (Note 6)
(l) Ignition Oven (Note 7)

Note 6. The Superpave gyratory compactor (SGC) shall be used for all laboratory mixture compaction.

Note 7. The ignition oven shall be used for determination of AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the calibration factor exceeds 1.5 percent other IDOT approved methods shall be utilized for determination of AC content."

Revise Article 355.05 of the Standard Specifications to read:

"355.05 Mixture Design. The Contractor shall submit mix designs for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have completed the course, "Superpave Mix Design Upgrade". The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below:

AASHTO MP 2	Standard Specification for Superpave Volumetric Mix Design
AASHTO PP 2	Standard Practice for Short and Long Term Aging of Hot Mix Asphalt (HMA)

AASHTO PP 19 Standard Practice for Volumetric Analysis of Compacted Hot Mix Asphalt (HMA)

AASHTO PP 28 Standard Practice for Designing Superpave HMA

AASHTO T 209 Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

AASHTO T 312 Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor

AASHTO T 308 Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

(a) Job Mix Formula (JMF). The JMF shall be according to the following limits:

Ingredient	Percent by Dry Weight
Aggregate	93.0 to 96.0
Asphalt Cement	4.0 to 7.0
Dust/AC Ratio	1.4

When RAP material is being used, the JMF shall be according to the following limits:

Ingredient	Percent by Dry Weight
Virgin Aggregate(s)	46.0 to 96.0
RAP Material(s) (Note 1)	0 to 50
Mineral Filler (if required)	0 to 5.0
Asphalt Cement	4.0 to 7.0
Dust/AC Ratio	1.4

Note 1. If specified on the plans, the maximum percentage of RAP shall be as specified therein.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

Bituminous concrete binder course Superpave mixture IL-25.0 or IL-19.0 meeting the requirements of the special provision, "Superpave Bituminous Concrete Mixtures" may also be used. The minimum compacted lift thickness specified therein shall apply.

(b) Volumetric Requirements.

Design Compactive Effort	**Design Air Voids Target (%)**
N_{DES} =50	2.0

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(c) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified AASHTO T 283 using 4 in. Marshall bricks. To be considered acceptable by the Engineer as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSR) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSR values less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Engineer. The method of application shall be according to Article 406.12 of the Standard Specifications."

Revise Article 355.06 of the Standard Specifications to read:

"355.06 Mixture Production. The asphalt cement shall be transferred to the asphalt tanks and heated to a temperature of 120 °C (250 °F) to 175 °C (350 °F). If the loading temperature exceeds 175 °C (350 °F), the asphalt shall not be used until it has cooled to 175 °C (350 °F). Wide variations in temperature which affect the amount of asphalt delivered will not be permitted.

When a hot-mix plant conforming to Article 1102.01 is used, the aggregate shall be dried and heated in the revolving dryer to a temperature of 120 °C (250 °F) to 175 °C (350 °F).

The aggregate and bituminous material used in the bituminous aggregate mixture shall be measured separately and accurately by weight or by volume. When the aggregate is in the mixer, the bituminous material shall be added and mixing continued for a minimum of 30 seconds and until a homogeneous mixture is produced in which all particles of the aggregate are coated. The mixing period, size of the batch and the production rate shall be approved by the Engineer.

The ingredients shall be heated and combined in such a manner as to produce a mixture which, when discharged from the mixer, shall be workable and vary not more 10 °C (20 °F) from the temperature set by the Engineer.

When RAP material(s) is used in the bituminous aggregate mixture, the virgin aggregate(s) shall be dried and heated in the dryer to a temperature that will produce the specified resultant mix temperature when combined with the RAP material.

The heated virgin aggregates and mineral filler shall be combined with RAP material in such a manner as to produce a bituminous mixture which when discharged from the mixer shall not vary more than 15 °C (30 °F) from the temperature set by the Engineer. The combined ingredients shall be mixed for a minimum of 35 seconds and until a homogeneous mixture as to composition and temperature is obtained. The total mixing time shall be a minimum of 45 seconds consisting of dry and wet mixing. Variation in wet and dry mixing times may be permitted, depending on the moisture content and amount of salvaged material used. The mix temperature shall not exceed 175 °C (350 °F). Wide variations in the mixture temperature will be cause for rejection of the mix.

(a) Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

(b) Required Tests. Testing shall be conducted to control the production of the bituminous mixture at a frequency not less than that listed for Non-Class I mixtures in the special provision "QC/QA of Bituminous Concrete Mixtures".

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.6, and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resumption of production.

During production, mixture containing an anti-stripping additive will be tested by the Engineer for stripping according to Illinois Modified AASHTO T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

(c) Control Charts/Limits. Control charts/limits shall be according to QC/QA requirements for Non-Class I Mixtures."

Revise Article 355.08 of the Standard Specifications to read:

"**355.08 Placing.** The bituminous mixture shall be placed with a spreading and finishing machine. The minimum compacted thickness of each lift shall be according to the following table:

Nominal Maximum Aggregate Size of Mixture	Minimum Compacted Lift Thickness
CA 10 - 19 mm (3/4 in.)	57 mm (2 1/4 in.)
CA 6 – 25 mm (1 in.)	76 mm (3 in.)

The maximum compacted thickness of each lift shall be 100 mm (4 in.). If the Contractor elects to substitute an approved vibratory roller for one of the required rollers, the maximum compacted thickness of the each lift, excluding the top lift, may be increased to 150 mm (6 in.) provided the required density is obtained.

The surface of each lift shall be clean and dry before succeeding lifts are placed."

Revise Article 355.13 of the Standard Specifications to read:

"**355.13 Basis of Payment.** This work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS BASE COURSE SUPERPAVE of the thickness specified."

Revise Article 356.02 of the Standard Specifications to read:

"**356.02 Materials.** The materials for the bituminous concrete mixture shall meet the requirements of Article 355.02, be designed according to Article 355.05 and produced according to Article 355.06. Bituminous concrete binder course Superpave mixture IL-25.0 or IL-19.0 meeting the requirements of the special provision, "Superpave Bituminous Concrete Mixtures" may also be used. The minimum compacted lift thickness specified therein shall apply."

Revise the first paragraph of Article 356.06 of the Standard Specifications to read:

"**356.06 Base Course Widening.** The bituminous concrete mixture shall be transported according to Article 406.14."

Revise the second sentence of the fifth paragraph of Article 356.06 of the Standard Specifications to read:

"The minimum compacted thickness of each lift shall be according to the table shown in Article 355.08."

Revise the first paragraph of Article 356.11 of the Standard Specifications to read:

"**356.11 Basis of Payment.** Where the Department requires that bituminous concrete be used, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS CONCRETE BASE COURSE WIDENING SUPERPAVE of the thickness specified."

Stabilized Subbase and Bituminous Shoulders Superpave

Effective: April 1, 2002
Revised: January 1, 2003

Description. This work shall consist of constructing stabilized subbase and bituminous shoulders Superpave according to Sections 312 and 482 respectively, of the Standard Specifications and the special provision, "Quality Control/Quality Assurance of Bituminous Concrete Mixtures" except as modified herein.

Revise Article 312.03(b) of the Standard Specifications to read:

"(b) RAP Material (Note 3)"

Revise Note 2 of Article 312.03 of the Standard Specifications to read:

"Note 2. Gradation CA 6, CA 10, or CA 12 shall be used."

Revise Note 3 of Article 312.03 of the Standard Specifications to read:

"Note 3. RAP shall meet the requirements of the special provision "RAP for Use in Bituminous Concrete Mixtures". RAP containing steel slag shall be permitted for use in top-lift surface mixtures only."

Revise Note 4 of Article 312.03 of the Standard Specifications to read:

"Note 4. Unless otherwise specified on the plans, the bituminous material shall be performance graded asphalt cement, PG58-22. When more than 15 percent RAP is used, a softer PG binder may be required as determined by the Engineer."

Add the following to Article 312.04 of the Standard Specifications:

"(k) Superpave Gyratory Compactor (Note 6)
(l) Ignition Oven (Note 7)

Note 6. The Superpave gyratory compactor (SGC) shall be used for all laboratory mixture compaction.

Note 7. The ignition oven shall be used for determination of AC content. The ignition oven shall also be used to recover aggregates for all required washed gradations. The Engineer may waive the ignition oven requirement for AC content if the aggregates to be used are known to have ignition AC content calibration factors which exceed 1.5 percent. If the calibration factor exceeds 1.5 percent other IDOT approved methods shall be utilized for determination of AC content."

Revise Article 312.06 of the Standard Specifications to read:

"312.06 Mixture Design. The Contractor shall submit mix designs for approval, for each required mixture. Mix designs shall be developed by Level III personnel who have completed the course, "Superpave Mix Design Upgrade". The mixtures shall be designed according to the respective Illinois Modified AASHTO references listed below:

AASHTO MP 2 Standard Specification for Superpave Volumetric Mix Design

AASHTO PP 2 Standard Practice for Short and Long Term Aging of Hot Mix Asphalt (HMA)

AASHTO PP 19 Standard Practice for Volumetric Analysis of Compacted Hot Mix Asphalt (HMA)

AASHTO PP 28 Standard Practice for Designing Superpave HMA

AASHTO T 209 Theoretical Maximum Specific Gravity and Density of Bituminous Paving Mixtures

AASHTO T 312 Preparing and Determining the Density of Hot Mix Asphalt (HMA) Specimens by Means of the Superpave Gyratory Compactor

AASHTO T 308 Determining the Asphalt Content of Hot Mix Asphalt (HMA) by the Ignition Method

(a) Job Mix Formula (JMF). The JMF shall be according to the following limits:

Ingredient	Percent by Dry Weight
Aggregate	94.0 to 96.0
Asphalt Cement	4.0 to 6.0*
Dust/AC Ratio	1.4

*Upper limit may be raised for the lower or top lifts if the Contractor elects to use a highly absorptive coarse and/or fine aggregate requiring more than six percent asphalt. The additional asphalt shall be furnished at no cost to the Department.

When RAP material is being used, the JMF shall be according to the following limits:

Ingredient	Percent by Dry Weight
Virgin Aggregate(s)	46.0 to 96.0
RAP Material(s) (Note 1)	0 to 50
Mineral Filler (if required)	0 to 5.0
Asphalt Cement	4.0 to 7.0
Dust/AC Ratio	1.4

Note 1. If specified on the plans, the maximum percentage of RAP shall be as specified therein.

It is recommended that the selected combined aggregate gradation not pass through the restricted zones specified in Illinois Modified AASHTO MP 2.

(b) Volumetric Requirements.

Design Compactive Effort	Design Air Voids Target (%)
N_{DES} =30	2.0

(c) Determination of Need for Anti-Stripping Additive. The mixture designer shall determine if an additive is needed in the mix to prevent stripping. The determination will be made on the basis of tests performed according to Illinois Modified AASHTO T 283 using 4 in. Marshall bricks. To be considered acceptable by the Engineer as a mixture not susceptible to stripping, the ratio of conditioned to unconditioned split tensile strengths (TSR) shall be equal to or greater than 0.75. Mixtures, either with or without an additive, with TSR values less than 0.75 will be considered unacceptable.

If it is determined that an additive is required, the additive may be hydrated lime, slaked quicklime, or a liquid additive, at the Contractor's option. The liquid additive shall be selected from the Department's list of approved additives and may be limited to those which have exhibited satisfactory performance in similar mixes.

Dry hydrated lime shall be added at a rate of 1.0 to 1.5 percent by weight of total dry aggregate. Slurry shall be added in such quantity as to provide the required amount of hydrated lime solids by weight of total dry aggregate. The exact rate of application for all anti-stripping additives will be determined by the Engineer. The method of application shall be according to Article 406.12 of the Standard Specifications."

Revise Article 312.08 of the Standard Specifications to read:

"312.08 Mixture Production. When a hot-mix plant conforming to Article 1102.01 is used, the aggregate shall be dried and heated in the revolving dryer to a temperature of 120 °C (250 °F) to 175 °C (350 °F).

The aggregate and bituminous material used in the bituminous aggregate mixture shall be measured separately and accurately by weight or by volume. When the aggregate is in the mixer, the bituminous material shall be added and mixing continued for a minimum of 35 seconds and until a homogeneous mixture is produced in which all particles of the aggregate are coated. The mixing period, size of the batch and the production rate shall be approved by the Engineer.

The ingredients shall be heated and combined in such a manner as to produce a mixture which, when discharged from the mixer, shall be workable and vary not more 10 °C (20 °F) from the temperature set by the Engineer.

When RAP material(s) is used in the bituminous aggregate mixture, the virgin aggregate(s) shall be dried and heated in the dryer to a temperature that will produce the specified resultant mix temperature when combined with the RAP material.

The heated virgin aggregates and mineral filler shall be combined with RAP material in such a manner as to produce a bituminous mixture which when discharged from the mixer shall not vary more than 15 °C (30 °F) from the temperature set by the Engineer. The combined ingredients shall be mixed for a minimum of 35 seconds and until a homogeneous mixture as to composition and temperature is obtained. The total mixing time shall be a minimum of 45 seconds consisting of dry and wet mixing. Variation in wet and dry mixing times may be permitted, depending on the moisture content and amount of salvaged material used. The mix temperature shall not exceed 175 °C (350 °F). Wide variations in the mixture temperature will be cause for rejection of the mix.

(a) Personnel. The QC Manager and Level I Technician shall have successfully completed the Department's "Superpave Field Control Course".

(b) Required Tests. Testing for stabilized subbase and bituminous shoulders shall be conducted to control the production of the bituminous mixture at a frequency not less than that listed for Non-Class I mixtures in the special provision "QC/QA of Bituminous Concrete Mixtures".

During production, the ratio of minus 75 µm (#200) sieve material to total asphalt cement shall be not less than 0.6 nor more than 1.6, and the moisture content of the mixture at discharge from the mixer shall not exceed 0.5 percent. If at any time the ratio of minus 75 µm (#200) material to asphalt or moisture content of the mixture falls outside the stated limits, production of the mix shall cease. The cause shall be determined and corrective action satisfactory to the Engineer shall be initiated prior to resumption of production.

During production, mixture containing an anti-stripping additive will be tested by the Engineer for stripping according to Illinois Modified AASHTO T 283. If the mixture fails to meet the TSR criteria for acceptance, no further mixture will be accepted until the Contractor takes such action as is necessary to furnish a mixture meeting the criteria.

(c) Control Charts/Limits. Control charts/limits shall be according to QC/QA requirements for Non-Class I Mixtures."

Replace the first paragraph of Article 312.10 of the Standard Specifications with the following:

"**312.10 Placing and Compacting.** After the subgrade has been compacted and is acceptable to the Engineer, the bituminous aggregate mixture shall be spread upon it with a mechanical spreader. The maximum compacted thickness of each lift shall be 150 mm (6 in.) provided the required density is obtained. The minimum compacted thickness of each lift shall be according to the following table:

Nominal Maximum Aggregate Size of Mixture	Minimum Compacted Lift Thickness
CA 12 – 12.5 mm (1/2 in.)	38 mm (1 1/2 in.)
CA 10 - 19 mm (3/4 in.)	57 mm (2 1/4 in.)
CA 6 – 25 mm (1 in.)	76 mm (3 in.)

The surface of each lift shall be clean and dry before succeeding lifts are placed."

Revise Article 482.02 of the Standard Specifications to read:

"**482.02 Materials.** Materials shall meet the requirements of Article 312.03. For the top lift, the aggregate used shall meet the gradation requirements for a CA 10 or CA 12. Blending of aggregates to meet these gradation requirements will be permitted."

In the first sentence of the first paragraph of Article 482.04 of the Standard Specifications change "Class I Binder and Surface Course (Type 1 or Type 2)" to "Superpave Binder and Surface Course".

Revise Article 482.04(c) of the Standard Specifications to read:

"(c) Mixture Production.....312.08"

Revise Article 482.05 of the Standard Specifications to read:

"**482.05 Composition of Bituminous Aggregate Mixture.** The composition of the mixture shall be according to Article 312.06, except that the amount of bitumen used in the top lift shall be increased up to 0.5 percent more than that required in the lower lifts. For resurfacing projects when the Superpave option is used, the bitumen used in the top lift shall not be increased. Superpave mixtures used on the top lift of such shoulders shall meet the gradation requirements of the special provision "Superpave Bituminous Concrete Mixtures".

For shoulder and strip construction, the composition of the Superpave binder and surface course shall be the same as that specified for the mainline pavement."

In the following locations of Section 482 of the Standard Specifications, change "Class I" to "Superpave":

the second paragraph of Article 482.04
the first sentence of the second paragraph of Article 482.06
the first sentence of the fourth paragraph of Article 482.06
the second sentence of the fourth paragraph of Article 482.06
the first sentence of the third paragraph of Article 482.08(b)

Revise the first paragraph of Article 482.06 of the Standard Specifications to read:

"**482.06 Placing and Compacting.** This work shall be according to Article 312.10. The mechanical spreader for the top lift of shoulders shall meet the requirements of Article 1102.03 when the shoulder width is 3 m (10 ft) or greater."

Revise Article 482.09 of the Standard Specifications to read:

"**482.09 Basis of Payment.** When bituminous shoulders are constructed along the edges of the completed pavement structure, this work will be paid for at the contract unit price per square meter (square yard) for BITUMINOUS SHOULDERS SUPERPAVE of the thickness specified. The specified thickness shall be the thickness shown on the plans at the edge of the pavement.

On pavement and shoulder resurfacing projects, the shoulder resurfacing will be paid for at the contract unit price per metric ton (ton) for BITUMINOUS SHOULDERS SUPERPAVE.

The construction of shoulder strips for resurfacing pavements will be paid according to the special provision, "Superpave Bituminous Concrete Mixtures"."

Light Emitting Diode (LED) Signal Head

Effective: April 1, 2002
Revised: August 1, 2003

Add the following paragraph to the end of Article 802.03 of the Standard Specifications:

"The warranty for light emitting diode (LED) modules, including the maintained minimum luminous intensities, shall cover a minimum of 60 months from the date of delivery."

Revise Article 880.01 of the Standard Specifications to read:

"**880.01 Description.** This work shall consist of furnishing and installing a conventional signal head, optically programmed signal head or light emitting diode (LED) signal head."

Revise Article 880.02(a) of the Standard Specifications to read:

"(a) Signal Heads.....1078.01"

Revise the first sentence of the first paragraph of Article 880.03 of the Standard Specifications to read:

"The signal head shall be installed on a post, bracket, span wire or mast arm as shown on the plans."

Revise the first paragraph of Article 880.04 of the Standard Specifications to read:

"**880.04 Basis of Payment.** This work will be paid for at the contract unit price each for SIGNAL HEAD, OPTICALLY PROGRAMMED SIGNAL HEAD, or SIGNAL HEAD, LED of the type specified and of the material type when specified."

Revise Article 1078.01 of the Standard Specifications to read:

"**1078.01 Signal Head, Optically Programmed Signal Head and Light Emitting Diode (LED) Signal Head.**"

Add the following to Article 1078.01(c) of the Standard Specifications:

"(3) The LED signal section shall be according to the following:

a. General Requirements. The LED signal head shall meet the requirements of the Institute of Transportation Engineers (ITE) interim LED purchase specification, "Vehicle Traffic Control Signal Heads, Part 2: LED Vehicle Traffic Signal Modules", or applicable successor ITE specifications, except as modified herein. The LEDs utilized in the modules shall not be Aluminum Gallium Arsenide (AlGaAs) material technology.

b. Physical and Mechanical Requirements. The power supply for the LED module shall be integrated with the unit.

c. Photometric Requirements. The candlepower values for yellow 300 mm (12 in.) circular modules shall be equal to the corresponding values for green 300 mm (12 in.) circular modules as listed in Table 1 of Section 4 of the aforementioned ITE specification based on normal use in traffic signal operation over the operating temperature range.

The illuminated portion of the arrow module shall be uniformly and completely dispersed with the LEDs.

d. Electrical Requirements. When applicable to the particular module type, the LED signal module shall be EPA Energy Star qualified. For yellow 300 mm (12 in.) circular and arrow modules, the wattage requirements shall be as follows:

Module Type	Maximum Watts (W) at 74 °C (165 °F)	Nominal Watts (W) at 25 °C (77 °F)
300 mm (12 in.) Yellow Circular	25	22
300 mm (12 in.) Yellow Arrow	12	10

The individual LEDs shall be wired such that a catastrophic loss or the failure of one LED will result in the loss of not more than 5 percent of the signal module light output.

e. Warranty. The LED modules shall be warrantied according to Article 802.03. The maintained minimum intensities for 300 mm (12 in.) arrow modules throughout the warranty period under the operating temperature and voltage range, and at the end of the warranty period shall not be less than the following values:

Module Type	Maintained Minimum Intensities (cd/sq m)
Red Arrow	5,000
Yellow Arrow	11,000
Green Arrow	11,000"

Furnished Excavation

Effective: August 1, 2002

Revise Article 204.07(b) of the Standard Specifications to read:

(b) Measured Quantities. Furnished excavation will be computed for payment in cubic meters (cubic yards) as follows:

Furnished Excavation = Embankment - [Suitable Excavation x (1 - Shrinkage Factor)]

Where:

Embankment = the volume of fill in its final position computed by the method of average end areas and based upon the existing ground line as shown on the plans except as noted in (1) and (2) below;

Suitable Excavation = earth excavation, rock excavation and other on-site excavation suitable for use in embankments; the volume of other on-site suitable excavation, whether paid for separately or included in the cost of the various items of work, will be computed by the method of average end areas;

Shrinkage Factor = 0.25 unless otherwise shown on the plans.

(1) If the Contractor so requests, the Engineer will reestablish the existing ground line after the clearing and tree removal have been performed according to Section 201 and the top 150 mm (6 in.) of the existing ground surface has been disked and compacted to the satisfaction of the Engineer.

(2) If settlement platforms are erected, the Engineer will reestablish the existing ground line after the embankment is complete as specified in Article 204.07(a)(2).

Furnished excavation placed in excess of that required for the execution of the contract will not be measured for payment.

Freeze-Thaw Rating

Effective: November 1, 2002

Revise the first sentence of Article 1004.02(f) of the Standard Specifications to read:

"When coarse aggregate is used to produce portland cement concrete for base course, base course widening, pavement, driveway pavement, sidewalk, shoulders, curb, gutter, combination curb and gutter, median, paved ditch or their repair using concrete, the gradation permitted will be determined from the results of the Department's Freeze-Thaw Test."

Traffic Structures

Effective: November 1, 2002

Add the following sentence to the end of the first paragraph of Article 1069.01(a)(1) of the Standard Specifications:

> "Light poles shall be designed for 145 km/hr (90 mph) wind velocity and a minimum design life of 50 years."

Add the following sentence to the end of the third paragraph of Article 1069.04(a) of the Standard Specifications:

> "Light towers shall be designed for 145 km/hr (90 mph) wind velocity and a minimum design life of 50 years."

Revise the last sentence of the first paragraph of Article 1077.03(a)(1) of the Standard Specifications to read:

> "The design shall be according to AASHTO "Standard Specification for Structural Supports for Highway Signs, Luminaries and Traffic Signals" 1994 Edition for 130 km/hr (80 mph) wind velocity. However the arm-to-pole connection shall be according to the "ring plate" detail as shown in Figure 11-1(f) of the 2002 Interim, to the AASHTO "Standard Specification for Structural Supports for Highway Signs, Luminaries and Traffic Signals" 2001 4th Edition."

Temporary Erosion Control

Effective: November 1, 2002

Revise the fifth sentence of the third paragraph of Article 280.04(a) of the Standard Specifications to read:

"This work may be constructed of hay or straw bales, extruded UV resistant high density polyethylene panels, erosion control blanket, mulch barrier, aggregate barriers, excavation, seeding, or mulch used separately or in combination, as approved, by the Engineer."

Add the following paragraphs after the fifth paragraph of Article 280.04(a) of the Standard Specifications.

"A ditch check constructed of extruded, UV resistant, high density polyethylene panels, "M" pins and erosion control blanket shall consist of the following materials:

Extruded, UV resistant, high density polyethylene panels shall have a minimum height of 250 mm (10 in.) and minimum length of 1.0 m (39.4 in.). The panels shall have a 51 mm (2 in.) lip along the bottom of the panel. Each panel shall have a single rib thickness of 4 mm (5/32 in.) with a 12 mm (1/2 in.) distance between the ribs. The panels shall have an average apparent opening size equal to 4.75 mm (No. 4) sieve, with an average of 30 percent open area. The tensile strength of each panel shall be 26.27 kN/m (1800 lb/ft) in the machine direction and 7.3 kN/m (500 lb/ft) in the transverse direction when tested according to ASTM D 4595.

"M" pins shall be at least 76 mm (3 in.) by 686 mm (27 in.), constructed out of deformed grade C1008 D3.5 rod (0.211 in. diameter). The rod shall have a minimum tensile strength of 55 MPa (8000 psi).

Erosion control blanket shall conform to Article 251.04.

A section of erosion control blanket shall be placed transverse to the flowline direction of the ditch prior to the construction of the polyethylene ditch check. The length of the section shall extend from the top of one side of the ditch to the top of the opposite side of the ditch, while the width of the section shall be one roll width of the blanket. The upstream edge of the erosion control blanket shall be secured in a 100 mm (4 in.) trench. The blanket shall be secured in the trench with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge before the trench is backfilled. Once the upstream edge of the blanket is secured, the downstream edge shall be secured with 200 mm (8 in.) staples placed at 300 mm (1 ft) intervals along the edge. The polyethylene ditch check shall be installed in the middle of the erosion control blanket, with the lip of each panel facing outward.

The ditch check shall consist of two panels placed back to back forming a single row. Placement of the first two panels shall be at the toe of the backslope or sideslope, with the panels extending across the bottom of the ditch. Subsequent panels shall extend both across the bottom of the ditch and up the opposite sideslope, as well as up the original backslope or sideslope at the distance determined by the Engineer.

The M pins shall be driven through the panel lips to secure the panels to the ground. M pins shall be installed in the center of the panels with adjacent panels overlapping the ends a minimum of 50 mm (2 in.). The pins shall be placed through both sets of panels at each overlap. They shall be installed at an interval of three M pins per one meter (39 in.) length of ditch check. The panels shall be wedged into the M pins at the top to ensure firm contact between the entire bottom of the panels and the soil."

Controlled Aggregate Mixing System

Effective: November 1, 2002

Revise the fourth sentence of the first paragraph of Article 311.05(b) of the Standard Specifications to read:

> "The water and granular material shall be mixed through a controlled aggregate mixing system. The system shall consist of a mechanical mixing device and aggregate and water measuring devices, meeting the approval of the Engineer."

Revise the third and fourth sentences of the fourth paragraph of Article 351.05(b) of the Standard Specifications to read:

> "The water and aggregate shall be mixed through a controlled aggregate mixing system. The system shall consist of a mechanical mixing device and aggregate and water measuring devices, meeting the approval of the Engineer."

Delete the third sentence of the first paragraph of Article 351.05(c) of the Standard Specifications.

Revise the second and third sentences of the first paragraph of Article 481.04(a) of the Standard Specifications to read:

> "The water and aggregate shall be mixed through a controlled aggregate mixing system. The system shall consist of a mechanical mixing device and aggregate and water measuring devices, meeting the approval of the Engineer."

Bridge Deck Construction

Effective: April 1, 2002
Revised: January 1, 2004

Add the following to Article 503.03 of the Standard Specifications:

"(h) Fogging Equipment ..... 1103.17(k)"

Add the following after the first sentence of the second paragraph to Article 503.07 of the Standard Specifications:

"When placing Class BD concrete, the discharge end of the pump shall have attached an "S" shaped flexible or rigid conduit, a 90 degree elbow with a minimum of 3 m (10 ft) of flexible conduit placed parallel to the deck, or a similar configuration approved by the Engineer."

Add the following after the second sentence of the ninth paragraph of Article 503.07 of the Standard Specifications:

"When consolidating concrete in bridge decks, the vibrator shall be vertically inserted into the concrete for 3 - 5 seconds, or for a period of time determined by the Engineer."

Add the following after the first paragraph of Article 503.17 of the Standard Specifications:

"For the bridge deck pour, fogging equipment shall be in operation unless the evaporation rate is less than 0.5 kg/sq m/hour (0.1 lb/sq ft/hour) and the Engineer gives permission to turn off the equipment. The evaporation rate shall be determined according to the figure in the Portland Cement Association's publication, "Design and Control of Concrete Mixtures" (refer to the section on plastic shrinkage cracking). The Contractor shall provide temperature, relative humidity, and wind speed measuring equipment.

The fogging equipment shall be adjusted to adequately cover the entire width of the pour.

If there is a delay of more than ten minutes during bridge deck placement, wet burlap shall be used to protect the concrete until operations resume.

Concrete placement operations shall be coordinated to limit the distance between the point of concrete placement and concrete covered with cotton mats for curing. The distance shall not exceed 10.5 m (35 ft). For bridge deck widths greater than 15 m (50 ft), the distance shall not exceed 7.5 m (25 ft)."

Add the following to the end of the first paragraph of Article 503.17(b) of the Standard Specifications to read:

"The concrete in these areas shall be struck off during the deck pour and excess material from the finishing machine shall not be incorporated."

Revise Article 1020.05(d) of the Standard Specifications to read:

"(d)Class BD Concrete. The maximum mortar factor shall be 0.86."

Add the following to Article 1103.17 of the Standard Specifications:

"(k) Fogging Equipment. Fogging equipment shall consist of a mechanically operated, pressurized system using a triple headed nozzle or an equivalent nozzle. The fogging nozzle shall be capable of producing a fine fog mist that will increase the relative humidity of the air just above the fresh concrete surface without accumulating any water on the concrete. The fogging equipment shall be mounted behind the roller and pan of finishing machine or on a separate foot bridge. Controls shall be designed to vary the volume of water flow, be easily accessible and immediately shut off the water when in the off position. Hand held fogging equipment will not be allowed."

Preformed Recycled Rubber Joint Filler

Effective: November 1, 2002

Revise Article 503.02(c) of the Standard Specifications to read:

"(c) Preformed Expansion Joint Filler ..... 1051"

Revise Article 637.02(d) of the Standard Specifications to read:

"(d) Preformed Expansion Joint Filler ..... 1051"

Add the following Article to Section 1051 of the Standard Specifications:

"1051.10 Preformed Recycled Rubber Joint Filler. Preformed recycled rubber joint filler shall consist of ground tire rubber, free of steel and fabric, combined with ground scrap or waste polyethylene. It shall not have a strong hydrocarbon or rancid odor and shall meet the physical property requirements of ASTM D 1752. Water absorption by volume shall not exceed 5.0 percent."

Allowable Lane Differential

Effective: July 1, 2002

Revise the first sentence of the third paragraph of Article 701.04(b)(1) of the Standard Specifications to read:

"The maximum allowable differential in elevation between adjacent open traffic lanes shall be 57 mm (2 1/4 in.)."

Work Zone Traffic Control Devices

Effective: January 1, 2003
Revised: April 1, 2003

Add the following to Article 702.01 of the Standard Specifications:

"All devices and combinations of devices shall meet the requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 for their respective categories. The categories are as follows:

Category 1 includes small, lightweight, channelizing and delineating devices that have been in common use for many years and are known to be crashworthy by crash testing of similar devices or years of demonstrable safe performance. These include cones, tubular markers, flexible delineators and plastic drums with no attachments. Category 1 devices shall be crash tested and accepted or may be self-certified by the manufacturer.

Category 2 includes devices that are not expected to produce significant vehicular velocity change but may otherwise be hazardous. These include drums and vertical panels with lights, barricades and portable sign supports. Category 2 devices shall be crash tested and accepted for Test Level 3.

Category 3 includes devices that are expected to cause significant velocity changes or other potentially harmful reactions to impacting vehicles. These include crash cushions, truck mounted attenuators and other devices not meeting the definitions of Category 1 or 2. Category 3 devices shall be crash tested and accepted for Test Level 3.

Category 4 includes portable or trailer-mounted devices such as arrow boards, changeable message signs, temporary traffic signals and area lighting supports. Currently, there is no implementation date set for this category and it is exempt from the NCHRP 350 compliance requirement.

The Contractor shall provide a manufacturer's self-certification letter for each Category 1 device and an FHWA acceptance letter for each Category 2 and Category 3 device used on the contract. The letters shall state the device meets the NCHRP 350 requirements for its respective category and test level, and shall include a detail drawing of the device."

Delete the third, fourth and fifth paragraphs of Article 702.03(b) of the Standard Specifications.

Delete the third sentence of the first paragraph of Article 702.03(c) of the Standard Specifications.

Delete the fourth paragraph of Article 702.05(a) of the Standard Specifications.

Revise the sixth paragraph of Article 702.05(a) of the Standard Specifications to read:

> "When the work operations exceed four days, all signs shall be post mounted unless the signs are located on the pavement or define a moving or intermittent operation. When approved by the Engineer, a temporary sign stand may be used to support a sign at 1.2 m (5 ft) minimum where posts are impractical. Longitudinal dimensions shown on the plans for the placement of signs may be increased up to 30 m (100 ft) to avoid obstacles, hazards or to improve sight distance, when approved by the Engineer. "ROAD CONSTRUCTION AHEAD" signs will also be required on side roads located within the limits of the mainline "ROAD CONSTRUCTION AHEAD" signs."

Delete all references to "Type 1A barricades" and "wing barricades" throughout Section 702 of the Standard Specifications.

Fluorescent Orange Sheeting on Drums

Effective: November 1, 2000
Revised: January 1, 2003

Revise the first sentence of the first paragraph of Article 702.03(e) of the Standard Specifications to read:

"Drums shall be nonmetallic and have alternating reflectorized Type AA or Type AP fluorescent orange and reflectorized white horizontal, circumferential stripes."

Vertical Barricades

Effective: November 1, 2002
Revised: January 1, 2003

Add the following to Article 702.03 of the Standard Specifications:

"(h) Vertical Barricades. Vertical Barricades shall meet the requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 and the special provision "Work Zone Traffic Control Devices". Vertical barricades may be used in lieu of cones, drums or Type I and Type II barricades to channelize traffic. Vertical barricades shall not be used in lane closure tapers."

Concrete Admixtures

Effective: January 1, 2003
Revised: January 1, 2004

Revise Article 1020.05(b) of the Standard Specifications to read:

"(b) Admixtures. Except as specified, the use of admixtures to increase the workability or to accelerate the hardening of the concrete will be permitted only when approved in writing by the Engineer. The Department will maintain an Approved List of Concrete Admixtures. When the Department permits the use of a calcium chloride accelerator, it shall be according to Article 442.02, Note 5.

When the atmosphere or concrete temperature is 18 °C (65 °F) or higher, a retarding admixture meeting the requirements of Article 1021.03 shall be used in the Class BD Concrete and portland cement concrete bridge deck overlays. The amount of retarding admixture to be used will be determined by the Engineer. The proportions of the ingredients of the concrete shall be the same as without the retarding admixture except that the amount of mixing water shall be reduced, as may be necessary, in order to maintain the consistency of the concrete as required. In addition, a high range water-reducing admixture shall be used in Class BD Concrete. The amount of high range water-reducing admixture will be determined by the Engineer. At the option of the Contractor, a water-reducing admixture may be used. Type I cement shall be used.

For Class PC and PS Concrete, a retarding admixture may be added to the concrete mixture when the concrete temperature is 18 °C (65 °F) or higher. The Engineer may order or permit the use of a retarding or water-reducing admixture whenever the Engineer considers it appropriate.

At the Contractor's option, admixtures in addition to an air-entraining admixture may be used for Class PP-1 concrete. The accelerator shall be the non-chloride type. If a water-reducing or retarding admixture is used, the cement factor may be reduced a maximum 18 kg/cu m (0.30 hundredweight/cu yd). If a high range water-reducing admixture is used, the cement factor may be reduced a maximum 36 kg/cu m (0.60 hundredweight/cu yd). Cement factor reductions shall not be cumulative when using multiple admixtures. An accelerator shall always be added prior to a high range water-reducing admixture, if both are used.

If Class C fly ash or ground granulated blast-furnace slag is used in Class PP-1 concrete, a water-reducing or high range water-reducing admixture shall be used. However, the cement factor shall not be reduced if a water-reducing, retarding, or high range water-reducing admixture is used. In addition, an accelerator shall not be used.

For Class PP-2 or PP-3 concrete, a non-chloride accelerator followed by a high range water-reducing admixture shall be used, in addition to the air-entraining admixture. For Class PP-3 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-2 or PP-3 concrete, the Contractor has the option to use a water-reducing admixture. A retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

When the air temperature is less than 13 °C (55 °F) for Class PP-1 or PP-2 concrete, the non-chloride accelerator shall be calcium nitrite.

For Class PP-4 concrete, a high range water-reducing admixture shall be used in addition to the air-entraining admixture. The Contractor has the option to use a water-reducing admixture. An accelerator shall not be used. For stationary or truck mixed concrete, a retarding admixture shall be used to allow for haul time. The Contractor has the option to use a mobile portland cement concrete plant according to Article 1103.04, but a retarding admixture shall not be used unless approved by the Engineer. A water-reducing, retarding, or high range water-reducing admixture shall not be used to reduce the cement factor.

If the Department specifies a calcium chloride accelerator for Class PP-1 concrete, the maximum chloride dosage shall be 1.0 L (1.0 quart) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.0 L (2.0 quarts) per 45 kg (100 lb) of cement if approved by the Engineer. If the Department specifies a calcium chloride accelerator for Class PP-2 concrete, the maximum chloride dosage shall be 1.3 L (1.3 quarts) of solution per 45 kg (100 lb) of cement. The dosage may be increased to a maximum 2.6 L (2.6 quarts) per 45 kg (100 lb) of cement if approved by the Engineer.

For Class PV, MS, SI, RR, SC and SH concrete, at the option of the Contractor, or when specified by the Engineer, a water-reducing admixture or a retarding admixture may be used. The amount of water-reducing admixture or retarding admixture permitted will be determined by the Engineer. The air-entraining admixture and other admixtures shall be added to the concrete separately, and shall be permitted to intermingle only after they have separately entered the concrete batch. The sequence, method and equipment for adding the admixtures shall be approved by the Engineer. The water-reducing admixture shall not delay the initial set of the concrete by more than one hour. Type I cement shall be used.

When a water-reducing admixture is added, a cement factor reduction of up to 18 kg/cu m (0.30 hundredweight/cu yd), from the concrete designed for a specific slump without the admixture, will be permitted for Class PV, MS, SI, RR, SC and SH concrete. When an approved high range water-reducing admixture is used, a cement factor reduction of up to 36 kg/cu m (0.60 hundredweight/cu yd), from a specific water cement/ratio without the admixture, will be permitted based on a 14 percent minimum water reduction. This is applicable to Class PV, MS, SI, RR, SC and SH concrete. A cement factor below 320 kg/cu m (5.35 hundredweight/cu yd) will not be permitted for Class PV, MS, SI, RR, SC and SH concrete. A cement factor reduction will not be allowed for concrete placed underwater. Cement factor reductions shall not be cumulative when using multiple admixtures.

For use of admixtures to control concrete temperature, refer to Articles 1020.14(a) and 1020.14(b).

The maximum slumps given in Table 1 may be increased to 175 mm (7 in.) when a high range water-reducing admixture is used for all classes of concrete except Class PV and PP."

Revise Section 1021 of the Standard Specifications to read:

"SECTION 1021. CONCRETE ADMIXTURES

1021.01 General. Admixtures shall be furnished in liquid form ready for use. The admixtures may be delivered in the manufacturer's original containers, bulk tank trucks or such containers or tanks as are acceptable to the Engineer. Delivery shall be accompanied by a ticket which clearly identifies the manufacturer and trade name of the material. In all cases, containers shall be readily identifiable to the satisfaction of the Engineer as to manufacturer and trade name of the material they contain.

Prior to inclusion of a product on the Department's Approved List of Concrete Admixtures, the manufacturer shall submit a report prepared by an independent laboratory accredited by the AASHTO Accreditation Program. The report shall show the results of physical tests conducted no more than five years prior to the time of submittal, according to applicable specifications.

Tests shall be conducted using materials and methods specified on a "test" concrete and a "reference" concrete, together with a certification that no changes have been made in the formulation of the material since the performance of the tests. The report shall also include water contents and results of set time tests according to AASHTO T 197 that were conducted on both a test and reference concrete, using cement from the source that is used as a standard by the Bureau of Materials and Physical Research. The cement content for all required tests shall either be according to applicable specifications or 335 kg/cu m (5.65 cwt/cu yd). Compressive strength test results for six months and one year will not be required.

Prior to the approval of an admixture, the Engineer may conduct all or part of the applicable tests on a sample that is representative of the material to be furnished. The test and reference concrete mixtures tested by the Engineer will contain a cement content of 335 kg/cu m (5.65 cwt/cu yd).

The manufacturer shall submit certification, both initially and annually thereafter, giving the following information according to ASTM C 494; the average and manufacturing range of specific gravity, the average and manufacturing range of solids in the solution, and the average and manufacturing range of pH. The initial and annual certifications shall further state that all admixtures, except chloride-based accelerators, shall contain no more than 0.3 percent chloride by mass. The initial submittal shall also include an infrared spectrophotometer trace no more than five years old.

Annual re-submittals will be required and shall include certification that no changes have been made in the formulation since it was initially approved. The certification shall state that the admixture is the same as previously approved, and the Engineer may conduct such tests as deemed desirable to check the properties of the material before re-approval is granted.

When test results are more than seven years old, the manufacturer shall re-submit the infrared spectrophotometer trace and the report prepared by an independent laboratory that is accredited by AASHTO Accreditation Program.

1021.02 Air-Entraining Admixtures. Air-entraining admixtures shall conform to the requirements of AASHTO M 154.

If the manufacturer certifies that the air-entraining admixture is an aqueous solution of Vinsol resin that has been neutralized with sodium hydroxide (caustic soda), testing for compliance with the requirements may be waived by the Engineer. In the certification, the manufacturer shall show complete information with respect to the formulation of the solution, including the number of parts of Vinsol resin to each part of sodium hydroxide. Before the approval of its use is granted, the Engineer will test the solution for its air-entraining quality in comparison with a solution prepared and kept for that purpose.

1021.03 Retarding and Water-Reducing Admixtures. The admixture shall comply with the following requirements:

(a) The retarding admixture shall comply with the requirements of AASHTO M 194, Type B (retarding) or Type D (water-reducing and retarding).

(b) The water-reducing admixture shall comply with the requirements of AASHTO M 194, Type A.

(c) The high range water-reducing admixture shall comply with the requirements of AASHTO M 194, Type F (high range water-reducing) or Type G (high range water-reducing and retarding).

When a Type F or Type G high range water-reducing admixture is used, water-cement ratios shall be a minimum of 0.32.

Type F or Type G admixtures may be used, subject to the following restrictions:

For Class MS, SI, RR, SC and SH concrete, the water-cement ratio shall be a maximum of 0.44.

The Type F or Type G admixture shall be added at the jobsite unless otherwise directed by the Engineer. The initial slump shall be a minimum of 40 mm (1 1/2 in.) prior to addition of the Type F or Type G admixture, except as approved by the Engineer.

When a Type F or Type G admixture is used, retempering with water or with a Type G admixture will not be allowed. An additional dosage of a Type F admixture, not to exceed 40 percent of the original dosage, may be used to retemper concrete once, provided set time is not unduly affected. A second retempering with a Type F admixture may be used for all classes of concrete except Class PP and SC, provided that the dosage does not exceed the dosage used for the first retempering, and provided that the set time is not unduly affected. No further retempering will be allowed.

Air tests shall be performed after the addition of the Type F or Type G admixture.

1021.04 Set Accelerating Admixtures. The admixture shall comply with the requirements of AASHTO M 194, Type C (accelerating) or Type E (water reducing and accelerating)"

Portland Cement Concrete

Effective: November 1, 2002

Add the following paragraph after the fourth paragraph of Article 1103.01(b) of the Standard Specifications:

"The truck mixer shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Add the following paragraph after the first paragraph of Article 1103.01(c) of the Standard Specifications:

"The truck agitator shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Add the following paragraph after the first paragraph of Article 1103.01(d) of the Standard Specifications:

"The nonagitator truck shall be approved before use according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Revise the first sentence of the first paragraph of Article 1103.02 of the Standard Specifications to read:

"The plant shall be approved before production begins according to the Bureau of Materials and Physical Research's Policy Memorandum, "Approval of Concrete Plants and Delivery Trucks"."

Curing and Protection of Concrete Construction

Effective: January 1, 2004

Revise the second and third sentences of the eleventh paragraph of Article 503.06 of the Standard Specifications to read:

"Forms on substructure units shall remain in place at least 24 hours. The method of form removal shall not result in damage to the concrete."

Delete the twentieth paragraph of Article 503.22 of the Standard Specifications.

Revise the "Unit Price Adjustments" table of Article 503.22 of the Standard Specifications to read:

"UNIT PRICE ADJUSTMENTS	
Type of Construction	Percent Adjustment in Unit Price
For concrete in substructures, culverts (having a waterway opening of more than 1 sq m (10 sq ft)), pump houses, and retaining walls (except concrete pilings, footings and foundation seals):	
When protected by:	
Protection Method II	115%
Protection Method I	110%
For concrete in superstructures:	
When protected by:	
Protection Method II	123%
Protection Method I	115%
For concrete in footings:	
When protected by:	
Protection Method I, II or III	107%
For concrete in slope walls:	
When protected by:	
Protection Method I	107%"

Delete the fourth paragraph of Article 504.05(a) of the Standard Specifications.

Revise the second and third sentences of the fifth paragraph of Article 504.05(a) of the Standard Specifications to read:

"All test specimens shall be cured with the units according to Article 1020.13."

Revise the first paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"Curing and Low Air Temperature Protection. The curing and protection for precast, prestressed concrete members shall be according to Article 1020.13 and this Article."

Revise the first sentence of the second paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"For curing, air vents shall be in place, and shall be so arranged that no water can enter the void tubes during the curing of the members."

Revise the first sentence of the third paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"As soon as each member is finished, the concrete shall be covered with curing material according to Article 1020.13."

Revise the eighth paragraph of Article 504.06(c)(6) of the Standard Specifications to read:

"The prestressing force shall not be transferred to any member before the concrete has attained the compressive strength of 28,000 kPa (4000 psi) or other higher compressive release strength specified on the plans, as determined from tests of 150 mm (6 in.) by 300 mm (12 in.) cylinders cured with the member according to Article 1020.13. Members shall not be shipped until 28-day strengths have been attained and members have a yard age of at least 4 days."

Delete the third paragraph of Article 512.03(a) of the Standard Specifications.

Delete the last sentence of the second paragraph of Article 512.04(d) of the Standard Specifications.

Revise the "Index Table of Curing and Protection of Concrete Construction" table of Article 1020.13 of the Standard Specifications to read:

"INDEX TABLE OF CURING AND PROTECTION OF CONCRETE CONSTRUCTION			
TYPE OF CONSTRUCTION	CURING METHODS	CURING PERIOD DAYS	LOW AIR TEMPERATURE PROTECTION METHODS
Cast-in-Place Concrete: [11/]			
Pavement Shoulder	1020.13(a)(1)(2)(3)(4)(5)[3/ 5/]	3	1020.13(c)
Base Course Base Course Widening	1020.13(a)(1)(2)(3)(4)(5)[1/ 2/]	3	1020.13(c)
Driveway Median Curb Gutter Curb and Gutter Sidewalk Slope Wall	1020.13(a)(1)(2)(3)(4)(5)[4/ 5/]	3	1020.13(c)[16/]
Paved Ditch Catch Basin Manhole Inlet Valve Vault	1020.13(a)(1)(2)(3)(4)(5)[4/]	3	1020.13(c)
Pavement Patching	1020.13(a)(1)(2)(3)(4)(5)[2/]	3[12/]	1020.13(c)
Pavement Replacement	1020.13(a)(1)(2)(3)(4)(5)[1/ 2/]	3	442.06(h) and 1020.13(c)
Railroad Crossing	1020.13(a)(3)(5)	1	1020.13(c)
Piles	1020.13(a)(3)(5)	7	1020.13(e)(1)(2)(3)
Footings Foundation Seals	1020.13(a)(1)(2)(3)(4)(5)[4/6/]	7	1020.13(e)(1)(2)(3)
Substructure	1020.13(a)(1)(2)(3)(4)(5)[1/7/]	7	1020.13(e)(1)(2)(3)
Superstructure (except deck)	1020.13(a)(1)(2)(3)(5)[8/]	7	1020.13(e)(1)(2)
Deck	1020.13(a)(5)	7	1020.13(e)(1)(2)[17/]
Retaining Walls	1020.13(a)(1)(2)(3)(4)(5)[1/7/]	7	1020.13(e)(1)(2)
Pump Houses	1020.13(a)(1)(2)(3)(4)(5)[1/]	7	1020.13(e)(1)(2)
Culverts	1020.13(a)(1)(2)(3)(4)(5)[4/6/]	7	1020.13(e)(1)(2)[18/]
Other Incidental Concrete	1020.13(a)(1)(2)(3)(5)	3	1020.13(c)
Precast Concrete: [11/]			
Bridge Beams Piles Bridge Slabs Nelson Type Structural Member	1020.13(a)(3)(5)[9/10/]	As required.[13/]	504.06(c)(6), 1020.13(e)(2)[19/]
All Other Precast Items	1020.13(a)(3)(4)(5)[2/9/10/]	As required.[14/]	504.06(c)(6), 1020.13(e)(2)[19/]
Precast, Prestressed Concrete: [11/]			
All Items	1020.13(a)(3)(5)[9/10/]	Until strand tensioning is released.[15/]	504.06(c)(6), 1020.13(e)(2)[19/]

Notes-General:

1/ Type I, membrane curing only

2/ Type II, membrane curing only

3/ Type III, membrane curing only

4/ Type I, II and III membrane curing

5/ Membrane curing will not be permitted between November 1 and April 15.

6/ The use of water to inundate footings, foundation seals or the bottom slab of culverts is permissible when approved by the Engineer, provided the water temperature can be maintained at 7 °C (45 °F) or higher.

7/ Asphalt Emulsion for Waterproofing may be used in lieu of other curing methods when specified and permitted according to Article 503.18.

8/ On non-traffic surfaces which receive protective coat according to Article 503.19, a linseed oil emulsion curing compound may be used as a substitute for protective coat and other curing methods. The linseed emulsion curing compound will be permitted between April 16 and October 31 of the same year, provided it is applied with a mechanical sprayer according to Article 1101.09 (b), and meets the material requirements of Article 1022.07.

9/ Steam curing (heat and moisture) is acceptable and shall be accomplished by the method specified in Article 504.06(c)(6).

10/ A moist room according to AASHTO M 201 is acceptable for curing.

11/ If curing is required and interrupted because of form removal for cast-in-place concrete items, precast concrete products, or precast prestressed concrete products, the curing shall be resumed within two hours from the start of the form removal.

12/ Curing maintained only until opening strength is attained, with a maximum curing period of three days.

13/ The curing period shall end when the concrete has attained the mix design strength. The producer has the option to discontinue curing when the concrete has attained 80 percent of the mix design strength or after seven days. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.

14/ The producer shall determine the curing period or may elect to not cure the product. All strength test specimens shall remain with the units and shall be subjected to the same curing method and environmental condition as the units, until the time of testing.

15/ The producer has the option to continue curing after strand release.

16/ When structural steel or structural concrete is in place above slope wall, Article 1020.13(c) shall not apply. The protection method shall be according to Article 1020.13(e)(1).

17/ When Article 1020.13(e)(2) is used to protect the deck, the housing may enclose only the bottom and sides. The top surface shall be protected according to Article 1020.13(e)(1).

18/ For culverts having a waterway opening of 1 sq m (10 sq ft) or less, the culverts may be protected according to Article 1020.13(e)(3).

19/ The seven day protection period in the first paragraph of Article 1020.13(e)(2) shall not apply. The protection period shall end when curing is finished. For the third paragraph of Article 1020.13(e)(2), the decrease in temperature shall be according to Article 504.06(c)(6)."

Add the following to Article 1020.13(a) of the Standard Specifications:

"(5) Wetted Cotton Mat Method. After the surface of concrete has been textured or finished, it shall be covered immediately with dry cotton mats. The cotton mats shall be placed in a manner which will not mar the concrete surface. A texture resulting from the cotton mat material is acceptable. The cotton mats shall then be wetted immediately and thoroughly

Revise the second sentence of the first paragraph of Article 1020.13(e)(2) of the Standard Specifications to read:

"The Contractor shall provide means for checking the temperature of the surface of the concrete or air temperature within the housing during the protection period."

Delete the last sentence of the first paragraph of Article 1020.13(e)(3) of the Standard Specifications.

Add the following Article to Section 1022 of the Standard Specifications:

"**1022.06 Cotton Mats.** Cotton mats shall consist of a cotton fill material, minimum 400 g/sq m (11.8 oz/sq yd), covered with unsized cloth or burlap, minimum 200 g/sq m (5.9 oz/sq yd), and be tufted or stitched to maintain stability.

Cotton mats shall be in a condition satisfactory to the Engineer. Any tears or holes in the mats shall be repaired.

Add the following Article to Section 1022 of the Standard Specifications:

"**1022.07 Linseed Oil Emulsion Curing Compound.** Linseed oil emulsion curing compound shall be composed of a blend of boiled linseed oil and high viscosity, heavy bodied linseed oil emulsified in a water solution. The curing compound shall meet the requirements of a Type I, II, or III according to Article 1022.01, except the drying time requirement will be waived. The oil phase shall be 50 ± 4 percent by volume. The oil phase shall consist of 80 percent by mass (weight) boiled linseed oil and 20 percent by mass (weight) Z-8 viscosity linseed oil. The water phase shall be 50 ± 4 percent by volume."

Revise Article 1020.14 of the Standard Specifications to read:

"**1020.14 Temperature Control for Placement.** Temperature control for concrete placement shall conform to the following requirements:

(a) Temperature Control other than Structures. The temperature of concrete immediately before placing, shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

Plastic concrete temperatures up to 35 °C (96 °F), as placed, may be permitted provided job site conditions permit placement and finishing without excessive use of water on and/or overworking of the surface. The occurrence within 24 hours of unusual surface distress shall be cause to revert to a maximum 32 °C (90 °F) plastic concrete temperature.

Concrete shall not be placed when the air temperature is below 5 °C (40 °F) and falling or below 2 °C (35 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either

steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

For pavement patching, refer to Article 442.06(e) for additional information on temperature control for placement.

(b) Temperature Control for Structures. The temperature of concrete as placed in the forms shall be not less than 10 °C (50 °F) nor more than 32 °C (90 °F). Aggregates and/or water shall be heated or cooled as necessary to produce concrete within these temperature limits. When insulated forms are used, the temperature of the concrete mixture shall not exceed 25 °C (80 °F). If the Engineer determines that heat of hydration might cause excessive temperatures in the concrete, the concrete shall be placed at a temperature between 10 °C (50 °F) and 15 °C (60 °F), per the Engineer's instructions. When concrete is placed in contact with previously placed concrete, the temperature of the concrete may be increased as required to offset anticipated heat loss.

Concrete shall not be placed when the air temperature is below 7 °C (45 °F) and falling or below 4 °C (40 °F), without permission of the Engineer. When placing of concrete is authorized during cold weather, the Engineer may require the water and/or the aggregates to be heated to not less than 20 °C (70 °F) nor more than 65 °C (150 °F). The aggregates may be heated by either steam or dry heat prior to being placed in the mixer. The apparatus used shall heat the mass uniformly and shall be so arranged as to preclude the possible occurrence of overheated areas which might damage the materials. No frozen aggregates shall be used in the concrete.

When the temperature of the plastic concrete reaches 30 °C (85 °F), an approved retarding admixture shall be used or the approved water reducing admixture in use shall have its dosage increased by 50 percent over the dosage recommended on the Department's Approved List of Concrete Admixtures for the temperature experienced. The amount of retarding admixture to be used will be determined by the Engineer. This requirement may be waived by the Engineer when fly ash compensated mixtures are used.

(c) Temperature. The concrete temperature shall be determined according to ASTM C 1064."

DRILLED SHAFTS
Effective: May 1, 2001
Revised: January 1, 2002

Description. This work shall consist of all labor, materials, equipment and services necessary to complete the drilled shaft installation according to the details and dimensions shown on the plans, this specification and as directed by the Engineer.

Submittals. The Contractor shall submit the following:

(a) Qualifications. At the time of the preconstruction conference, the Contractor shall provide the following documentation:

(1) A list containing at least 3 projects completed within the 3 years prior to this project's bid date which the Contractor performing this work has installed drilled shafts of similar diameter, length and site conditions to those shown in the plans. The list of projects shall contain names and phone numbers of owner's representatives who can verify the Contractor's participation on those projects.

(2) Name and experience record of the drilled shaft supervisor, responsible for all facets of the shaft installation, and the drill operator(s) who will be assigned to this project. The supervisor and driller shall each have a minimum of 3 years experience in the construction of drilled shafts.

(3) A signed statement that the drilled shaft supervisor has inspected both the project site and all the subsurface information available. In addition to the subsurface information in the contract documents, rock core specimens and/or geotechnical reports, when available, should be requested for evaluation.

(b) Installation Procedure. A submittal detailing the installation procedure will be required for all drilled shafts, unless directed otherwise by the Engineer. The Contractor, meeting the above qualifications, shall prepare the installation procedure, addressing all items shown below and will be responsible for directing all aspects of the shaft construction. The installation procedure shall be submitted to the Engineer at least 45 days prior to drilled shaft construction and shall address each of the following items:

(1) List of proposed equipment to be used including cranes, drill rigs, augers, belling tools, casing, core barrels, bailing buckets, final cleaning equipment, slurry equipment, tremies or concrete pumps, etc.

(2) Details of the overall construction operation sequence, equipment access, and the sequence of individual shaft construction within each substructure bent or footing group. The submittal shall address the Contractor's proposed time delay and/or the minimum concrete strength necessary before initiating a shaft excavation adjacent to a recently installed drilled shaft.

(3) A step by step description of how the Contractor anticipates the shaft excavation to be advanced based on their evaluation of the subsurface data and conditions expected to be encountered. This sequence shall note the method of casing advancement, anticipated casing lengths, tip elevations and diameters, the excavation tools used and drilled diameters created. The Contractor shall indicate whether wet or dry drilling conditions are expected or if the water table will be sealed from the excavation.

(4) When slurry is proposed, details covering the measurement and control of the hardness of the mixing water, agitation, circulation, de-sanding, sampling, testing and chemical properties of the slurry shall be submitted.

(5) Method(s) and sequence proposed for the shaft cleaning operation as well as recommendations on how the shaft excavation will be inspected under the installation conditions anticipated.

(6) Details of reinforcement placement including cage centralization devices to be used and method to maintain proper elevation and plan location of cage within the shaft excavation during concrete placement. The method(s) of adjusting the cage length if rock is encountered at an elevation other than as estimated in the plans.

(7) Details of concrete placement including proposed operational procedures for free fall, tremie or pumping methods. The sequence and method of casing removal shall also be stated along with the top of pour elevation, and method of forming through water above streambed.

(8) The proposed concrete mix design(s).

The Engineer will evaluate the drilled shaft installation plan and notify the Contractor of acceptance, or if additional information is required, or if there are concerns with the installation's effect on the existing or proposed structure(s).

Materials. The materials used for the construction of the drilled shaft shall satisfy the following requirements:

(a) The drilled shaft portland cement concrete shall be according to Section 1020, except the mix design shall be as follows:

(1) A Type I or II cement shall be used at 360 kg/cu m (605 lb/cu yd). When specified in the plans that soil and ground water sulfate contaminates exceed 500 parts per million, a Type V cement shall be required. The cement shall be increased 35 kg/cu m (60 lb/cu yd) if the concrete is to be placed under water.

(2) Class C or F fly ash may replace Type I or II cement. The cement replacement shall not exceed 15 percent by mass (weight) at a minimum replacement ratio of 1.5:1.

The fly ash shall not be used in combination with ground granulated blast- furnace slag.

(3) Grade 100 or 120 ground granulated blast-furnace slag may replace Type I or II cement. The cement replacement shall not exceed 25 percent by mass (weight) at a minimum replacement ratio of 1:1. The ground granulated blast-furnace slag shall not be used in combination with fly ash.

(4) The maximum water/cement ratio shall be 0.44.

(5) The mortar factor shall be a value which produces a coarse aggregate content comprising between 55 and 65 percent of total aggregate by mass (weight).

(6) The slump at point of placement shall be 175 mm ± 25 mm (7 ± 1 in.). If concrete is placed to displace drilling fluid, or against temporary casing, the slump shall be 200 mm ± 25 mm (8 ± 1 in.) at point of placement. The concrete mix shall be designed to remain fluid throughout the anticipated duration of the pour plus 1 hour.

(7) An air entraining admixture shall be required and the air content range shall be 4.0 to 7.0 percent.

(8) The minimum compressive strength shall be 27,500 kPa (4000 psi) at 14 days. The minimum flexural strength shall be 4,650 kPa (675 psi) at 14 days.

(9) A retarding admixture shall be required.

(10) A water-reducing or high range water-reducing admixture shall be required.

(11) An accelerating admixture may be used with the permission of the Engineer in extraordinary situations.

(12) The coarse aggregate shall be a CA 13, CA 14, CA 16 or a blend of these gradations. The fine aggregate shall consist of washed sand only.

At the Engineers discretion, and at no additional cost to the Department, the Contractor may be required to conduct a minimum 0.76 cu m (1 cu yd) trial batch to verify the mix design.

(b) The sand-cement grout mix used to fill any visible gaps, which may exist between the permanent casing and either the drilled excavation or temporary casing, shall be as follows:

(1) A Type I or II cement shall be used at 110 kg/cu m (185 lb/cu yd). When specified in the plans that soil and ground water sulfate contaminates exceed 500 parts per million, a Type V cement shall be required. The cement shall be according to Section 1001.

(2) The fine aggregate shall be according to Articles 1003.01 and 1003.02.

(3) The water shall be according to Section 1002.

(4) The maximum water/cement ratio shall be 1.0.

(c) Reinforcement shall be according to Section 508 of the Standard Specifications.

(d) Drilling slurry, when required, shall consist of a polymer or mineral base material. Mineral slurry shall have both a mineral grain size that will remain in suspension with sufficient viscosity and gel characteristics to transport excavated material to a suitable screening system. The percentage and specific gravity of the material used to make the suspension shall be sufficient to maintain the stability of the excavation and to allow proper concrete placement. For polymer slurry, the calcium hardness of the mixing water shall not exceed 100 mg/L.

(e) Permanent casing, when required, shall be fabricated from steel satisfying ASTM A252 Grade 2, produced by electric seam, butt, or spiral welding to satisfy the outside diameter(s) and lengths shown in the contract plans or as shown in the Contractor's installation procedure. The minimum wall thickness shall be as required to resist the anticipated installation and dewatering stresses, as determined by the Contractor, but in no case less than 6 mm (1/4 in.).

Equipment. The drilling equipment shall have adequate capacity, including power, torque and down thrust, to create a shaft excavation of the maximum diameter specified to a depth of 20 percent beyond the depths shown on the plans. Standby equipment of sufficient capacity shall be available so that there will be no delay in placing of the concrete once the operation has started. Concrete equipment shall be according to Article 1020.03 of the Standard Specifications.

Construction Requirements. Excavation for drilled shaft(s) shall not proceed until written authorization is received from the Engineer. The Contractor shall furnish an installation log for each shaft installed. Excavation by blasting shall not be permitted unless authorized in writing by the Engineer.

No shaft excavation shall be made within 4 shaft diameters center to center of a shaft with concrete that has a compressive strength less than 10,342 kPa (1500 psi) unless otherwise approved in the Contractor's installation procedure. The site-specific soil strengths and installation methods selected will determine the actual required minimum spacing, if any, to address vibration and blow out concerns.

Materials removed or generated from the shaft excavations shall be disposed of by the Contractor according to Article 202.03 of the Standard Specifications.

The Contractor's methods and equipment shall be suitable for the anticipated conditions and the following requirements noted below:

(a) Construction Tolerances. The following construction tolerances shall apply to all drilled shafts unless otherwise stated in the contract documents:

(1) The center of the drilled shaft shall be within 75 mm (3 in.) of the plan station and offset at the top of the shaft.

(2) The center of the reinforcement cage shall be within 38 mm (1 1/2 in.) of plan station and offset at the top of the shaft.

(3) The out of vertical plumbness of the shaft shall not exceed 1.5 percent.

(4) The out of vertical plumbness of the shaft reinforcement cage shall not exceed 0.83 percent.

(5) The top of the reinforcing steel cage shall be no more than 25 mm (1 in.) above and no more than 75 mm (3 in.) below the plan elevation.

(6) The top of the shaft shall be no more than 25 mm (1 in.) above and no more than 75 mm (3 in.) below the plan elevation.

(7) Excavation equipment and methods used to complete the shaft excavation shall have a nearly planar bottom. The cutting edges of excavation equipment used to create the bottom of shafts in rock shall be normal to the vertical axis of the shaft within a tolerance of 6.25 percent.

(b) Construction Methods. The construction of drilled shafts may involve the use of one or more of the following methods to support the excavation during the various phases of shaft drilling, cleaning and concrete placement dependent on the site conditions encountered. The following are general descriptions indicating the conditions when these methods may be used:

(1) Dry Method. The dry method consists of drilling the shaft excavation, removing accumulated water and loose material from the excavation, placing the reinforcing cage, and concrete in a predominately dry excavation. This method shall be used only at sites where the groundwater and soil conditions are suitable to permit the drilling and dewatering of the excavation without causing excessive water infiltration, boiling, squeezing, or caving of the shaft side walls. This method allows the concrete placement by tremie or concrete pumps, or if the excavation can be dewatered, the concrete can be placed by free fall within the limits specified for concrete placement.

(2) Wet Method. The wet construction method may be used at sites where dewatering the excavation would cause collapse of the shaft sidewalls or when the volume and head of water flowing into the shaft is likely to contaminate the concrete during placement resulting in a shaft defect. This method uses water or slurry to maintain stability of the shaft perimeter while advancing the excavation. After the excavation is completed, the water level in the shaft is allowed to seek equilibrium, the base is

cleaned, the reinforcing cage is set and the concrete is discharged at the base using a tremie pipe or concrete pump, displacing the drilling fluid upwards.

(3) Temporary Casing Method. Temporary casing shall be used when either the wet or dry methods provide inadequate support to prevent sidewall caving or ensure excessive deformation of the hole. Temporary casing may also be used to reduce the flow of water into the excavation to allow dewatering, adequate cleaning and inspection, or to insure proper concrete placement. Temporary casing left in place may constitute a shaft defect; no temporary casing will be allowed to remain permanently in place without the specific approval of the Engineer.

Before the temporary casing is broken loose, the level of concrete in the casing shall be a minimum of 1.5 m (5 ft) above the bottom of the casing. After being broken loose and as the casing is withdrawn, additional concrete shall be added to maintain sufficient head so that water and soil trapped behind the casing can be displaced upward and discharged at the ground surface without contaminating the concrete in the shaft or at the finished construction joint.

(4) Permanent Casing Method. When called for on the plans or proposed as part of the Contractor's accepted installation procedure, the Contractor shall install a permanent casing of the diameter, length, thickness and strength specified. When permanent casings are used, the lateral loading design requires intimate contact between the casing and the surrounding soils. If the installation procedure used to set the permanent casing results in annular voids between the permanent casing and the drilled excavation, the voids shall be filled with a sand-cement grout to maintain the lateral load capacity of the surrounding soil, as assumed in the design. No permanent casing will be allowed to remain in place beyond the limits shown on the plans without the specific approval of the Engineer.

(5) Removable Forms. When the shaft extends above streambed through a body of water and permanent casing is not shown, the portion above the streambed shall be formed with removable casings, column forms, or other forming systems as approved by the Engineer. The forming system shall not scar or spall the finished concrete or leave in place any forms or casing within the removable form limits as shown on the plans unless approved as part of the installation procedure. The forming system shall not be removed until the concrete has attained a minimum compressive strength of 17,237 kPa (2500 psi) and cured for a minimum of 72 hours. For shafts extending through water, the concrete shall be protected from water action after placement for a minimum of 7 days.

(c) Slurry. If the Contractor proposes to use a method of slurry construction, it shall be submitted with the installation plan. During construction, the level of the slurry shall be maintained at a height sufficient to prevent caving of the hole. In the event of a sudden or significant loss of slurry to the hole, the construction of that foundation shall be stopped and the shaft excavation backfilled or supported by temporary casing, until a method to stop slurry loss, or an alternate construction procedure has been approved by the Engineer.

(d) Obstructions. Obstructions shall be defined as any object (such as but not limited to, boulders, logs, old foundations etc.) that cannot be removed with normal earth drilling procedures but requires special augers, tooling, core barrels or rock augers to remove the obstruction. When obstructions are encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to core, break up, push aside, or remove the obstruction. Lost tools or equipment in the excavation as a result of the Contractor's operation shall not be defined as obstructions and shall be removed at the Contractor's expense.

(e) Top of Rock. The actual top of rock will be defined as the point when material is encountered which can not be drilled with a conventional earth auger and/or underreaming tool, and requires the use of special rock augers, core barrels, air tools, blasting or other methods of hand excavation.

(f) Sidewall overreaming. Sidewall overreaming shall be required when the sidewall of the hole is determined by the Engineer to have either softened due to the excavation methods, swelled due to delay in concreting, or degraded because of slurry cake buildup. It may also be required to correct a shaft excavation which has been drilled out of tolerance. Overreaming thickness shall be a minimum of 13 mm (1/2 in.). Overreaming may be accomplished with a grooving tool, overreaming bucket or other approved equipment. Any extra concrete needed as a result of the overreaming shall be furnished and installed at the Contractor's expense.

(g) Excavation Inspection. The Contractor shall be responsible for verification of the dimensions and alignment of each shaft excavation as directed by the Engineer. Unless otherwise specified in the contract documents, the Contractor's cleaning operation shall be adjusted so that a minimum of 50 percent of the base of each shaft shall have less than 13 mm (1/2 in.) of sediment or debris at the time of placement of the concrete. The maximum depth of sediment or any debris at any place on the base of the shaft shall not exceed 38 mm (1 1/2 in.).

Shaft cleanliness will be determined by the Contractor using the methods as submitted in their installation procedure. Visual inspection coupled with the use of a weighted tape may also be used to confirm adequate cleanliness.

(h) Design Modifications. If the top of rock elevation differs from that shown on the plans by more than 10 percent of the length of the shaft above the rock, the Engineer shall be contacted to determine if any drilled shaft design changes may be required. In addition, if the type of soil or rock encountered is not similar to that shown in the subsurface exploration data, the Contractor may be required to extend the drilled shaft length(s) beyond those specified in the plans. In either case, the Engineer will determine if revisions are necessary and the extent of the modifications required.

(i) Reinforcement Cage Construction and Placement. The shaft excavation shall be cleaned, inspected and accepted prior to placing the reinforcement cage. The reinforcement cage

shall be completely assembled prior to drilling and be ready for adjustment in length as required by the conditions encountered. The cage shall be lifted using multiple point sling straps or other approved methods to avoid cage distortion or stress. Additional cross frame stiffeners may also be required for lifting or to keep the cage in proper position during lifting and concrete placement.

The Contractor shall attach suitable centralizes to keep the cage away from the sides of the shaft excavation and ensure that at no point will the finished shaft have less than the minimum concrete cover(s) shown on the plans. The cage centralizes or other approved non-corrosive spacing devices shall be used at sufficient intervals (near the bottom and at intervals not exceeding 3 m (10 ft) throughout the length of the shaft) to ensure proper cage alignment and clearance for the entire shaft.

If the top of rock encountered is deeper than estimated in the plans, and/or if the conditions differ such that the length of the shaft is increased, additional longitudinal bars shall be either mechanically spliced or lap spliced to the lower end of the cage and confined with either hoop ties or spirals to provide the additional length. If the additional shaft length is less than the lap splice shown, subject to the approval of the Engineer, a mechanical splice may be used in lieu of the lap splice in order to take advantage of or utilize that lap length in the extension of the shaft reinforcement. The Contractor shall have additional reinforcement available or fabricate the cages with additional length as necessary to make the required adjustments in a timely manner as dictated by the encountered conditions. The additional reinforcement may be non-epoxy coated at the option of the Contractor. Any reinforcement fabricated in advance but not incorporated into the installed shaft(s) shall not be paid for but shall remain the property of the Contractor.

(j) Concrete placement. Concrete work shall be performed according to the applicable portions of Section 503 of the Standard Specifications and as specified herein.

Concrete shall be placed as soon as possible after reinforcing steel is set and secured in proper position. The pour shall be made in a continuous manner from the bottom to the top elevation of the shaft as shown on the contract plan or as approved in the Contractor's installation procedure. Concrete placement shall continue after the shaft excavation is full and until good quality, uncontaminated concrete is evident at the top of shaft. The elapsed time from the beginning of concrete placement in the shaft to the completion of the placement shall not exceed 2 hours. The Contractor may request a longer placement time provided the concrete mix maintains the minimum slump requirements over the longer placement time as demonstrated by trial mix and slump loss tests. Concrete shall be placed either by free fall, or through a tremie or concrete pump subject to the following conditions:

(1) The free fall placement shall only be permitted in shafts that can be dewatered to ensure less than 75 mm (3 in.) of standing water exist at the time of placement without causing side wall instability. The maximum height of free fall placement shall not exceed 18.3 m (60 ft). Concrete placed by free fall shall fall directly to the base without contacting either the rebar cage or hole sidewall. Drop chutes may be used to direct concrete to the base during free fall placement.

Drop chutes used to direct placement of free fall concrete shall consist of a smooth tube of either one continuous section or multiple pieces that can be added and removed. Concrete may be placed through either a hopper at the top of the tube or side openings as the drop chute is retrieved during concrete placement. The drop chute shall be supported so that the free fall does not exceed 18.3 m (60 ft) at all times and to ensure the concrete does not strike the rebar cage. If placement cannot be satisfactorily accomplished by free fall in the opinion of the Engineer, the Contractor shall use either tremie or pumping to accomplish the pour.

(2) Tremies shall consist of a tube of sufficient length, weight, and diameter to discharge the initial concrete at the base of the shaft. The tremie shall be according to Article 503.08 of the Standard Specifications and contain no aluminum parts that may have contact with the concrete. The inside and outside surfaces of the tremie shall be clean and smooth to permit both flow of concrete and unimpeded withdrawal during concrete placement.

(3) Concrete pumps: Pumps and lines may be used for concrete placement and shall have a minimum 100 mm (4 in.) diameter.

The tremie or pump lines used for wet method concrete placement shall be watertight and not begin discharge until placed within 250 mm (10 in.) of the shaft base. Valves, bottom plates or plugs may be used only when they can be removed from the excavation or be of a material approved by the Engineer that will not cause a defect in the shaft if not removed. The discharge end shall be immersed at least 1.5 m (5 ft) in concrete at all times after starting the pour. Sufficient concrete head shall be maintained in the tremie at all times to prevent water or slurry intrusion in the shaft concrete.

If at any time during the concrete pour in the "wet" hole, the tremie or pump line orifice is removed from the fluid concrete and discharges through drilling fluid or water above the rising concrete level, the shaft may be considered defective.

Vibration of concrete is not recommended when placed while displacing drilling fluid or water. In dry excavations, vibration is allowed only in the top 3 m (10 ft) of the shaft.

Conformity with Contract. In addition to Article 105.03, the Contractor shall be responsible for correcting all out of tolerance excavations and completed shafts as well as repairing any defects in the shaft to the satisfaction of the Engineer at no additional cost to the Department. No time extensions will be allowed to repair or replace unacceptable work. When a shaft excavation is completed with unacceptable tolerances, the Contractor will be required to submit for approval his/her proposed corrective measures. Any proposed design modification with computations submitted by the Contractor shall be signed and sealed by an Illinois licensed Structural Engineer.

Method of Measurement. The items Drilled Shaft in Soil and Drilled Shaft in Rock, will be measured for payment and the length computed in meters (feet) for all drilled shafts installed according to the plans, specifications, and accepted by the Engineer. The length shall be measured at each shaft. The length in soil will be defined as the difference in elevation between the top of the drilled shaft shown on the plans, or as installed as part of the Contractor's installation procedure, and the bottom of the shaft or the top of rock (when present) whichever is higher. The length in rock will be defined as the difference in elevation between the measured top of rock and the bottom of the shaft. When permanent casing is installed as specified on the plans, it will be measured in meters (feet) and shall be the length of casing installed.

Basis of Payment. This work will be paid for at the contract unit price per meter (foot) for DRILLED SHAFT IN SOIL, and/or DRILLED SHAFT IN ROCK, of the diameter(s) specified. The price shall be payment in full for all labor, materials, equipment, and services necessary to complete the work as specified. When the shaft is detailed with a belled base, furnishing and installing it shall not be paid for separately but shall be included in the cost of the appropriate drilled shaft item(s).

When permanent casing is furnished and installed as specified, it will be paid for at the contract unit price per meter (foot) for PERMANENT CASING. Permanent casing installed at the Contractor's option shall not be included in this item, but shall be considered as included in the appropriate drilled shaft item(s) above.

Obstruction mitigation shall be paid for according to Article 109.04 of the Standard Specifications.

No additional compensation, other than noted above, will be allowed for removing and disposing of excavated materials, for furnishing and placing concrete, bracing, lining, temporary casings placed and removed or left in place, for grouting of any voids, or for any excavation made or concrete placed outside of the plan diameter(s) of the shaft(s) specified.

Reinforcement bars, spirals and ties shall be as specified and paid for under the items, REINFORCEMENT BARS or REINFORCEMENT BARS EPOXY COATED, according to Section 508 of the Standard Specifications.

CLEANING AND PAINTING NEW METAL STRUCTURES
Effective Date: September 13, 1994
Revised Date: April 2, 2003

Description. The material and construction requirements that apply to cleaning and painting new structural steel shall be according to the applicable portion of Sections 506 of the Standard Specifications except as modified herein. A three coat inorganic zinc rich /waterborne acrylic paint system shall be used.

Materials. All materials to be used on an individual structure shall be produced by the same manufacturer. The Bureau of Materials and Physical Research has established a list of all products that have met preliminary requirements. Each batch of material must be tested and approved by that bureau before use.

The paint materials shall meet the requirements of the following articles of the Standard Specification:

Item	Article
(a) Inorganic Zinc-Rich Primer	1008.22
(b) Waterborne Acrylic	1008.24
(c) Aluminum Epoxy Mastic	1008.25

Submittals. At least 30 days prior to beginning field painting, the Contractor shall submit for the Engineer's review and acceptance, the following applicable plans, certifications and information for completing the field work. Field painting can not proceed until the submittals are accepted by the Engineer. Qualifications, certifications and QC plans for shop cleaning and painting shall be available for review by the QA Inspector.

a) Contractor/Personnel Qualifications. Except for miscellaneous steel items such as bearings, side retainers, expansion joint devices, and other items allowed by the Engineer, or unless stated otherwise in the contract, the shop painting Contractors shall be certified to perform the work as follows: the shop painting Contractor shall possess AISC Sophisticated Paint Endorsement or SSPC-QP3 certification. Evidence of current qualifications shall be provided.

   Personnel managing the shop and field Quality Control program(s) for this work shall possess a minimum classification as a National Association of Corrosion Engineers (NACE) Coating Inspector Technician, or shall provide evidence of successful inspection of 3 projects of similar or greater complexity and scope that have been completed in the last 2 years. Copies of the certification and/or experience shall be provided.

   The personnel performing the QC tests for this work shall be trained in coatings inspection and the use of the testing instruments. Documentation of training shall be provided.

b) Quality Control (QC) Program. The shop and field QC Programs shall identify the following; the instrumentation that will be used, a schedule of required measurements and

observations, procedures for correcting unacceptable work, and procedures for improving surface preparation and painting quality as a result of quality control findings. The field program shall incorporate the IDOT Quality Control Daily Report form, as supplied by the Engineer.

c) Field Cleaning and Painting Inspection Access Plan. The inspection access plan for use by Contractor QC personnel for ongoing inspections and by the Engineer during Quality Assurance (QA) observations.

d) Surface Preparation/Painting Plan. The surface preparation/painting plan shall include the methods of surface preparation and type of equipment to be utilized for solvent cleaning, abrasive blast cleaning, washing, and power tool cleaning. The plan shall include the manufacturer's names of the materials that will be used, including Product Data Sheets and Material Safety Data Sheets (MSDS).

   A letter or written instructions from the coating manufacturer shall be included, indicating the required drying time for each coat at the minimum, normal, and maximum application temperatures before the coating can be exposed to temperatures or moisture conditions that are outside of the published application parameters.

Field Quality Control (QC) Inspections. The Contractor shall perform first line, in process QC inspections of each phase of the work. The Contractor shall implement the submitted and accepted QC Program to insure that the work accomplished complies with these specifications. The Contractor shall use the IDOT Quality Control Daily Report form supplied by the Engineer to record the results of quality control tests. The completed reports shall be turned into the Engineer before work resumes the following day.

The Contractor shall have available at the shop or on the field site, all of the necessary inspection and testing equipment. The equipment shall be available for Engineer use when requested.

Field Quality Assurance (QA) Observations. The Engineer will conduct QA observations of any or all phases of the work. The Engineer's observations in no way relieve the Contractor of the responsibility to provide all necessary daily QC inspections of his/her own and to comply with all requirements of this Specification.

The Engineer has the right to reject any work that was performed without adequate provision for QA observations.

The Engineer will issue a Non-Conformance Report when cleaning and painting work is found to be in violation of the specification requirements, and is not corrected to bring it into compliance before proceeding with the next phase of work.

Inspection Access and Lighting. The Contractor shall facilitate the Engineer's observations as required, including allowing ample time to view the work. The Contractor shall furnish, erect and move scaffolding or other mechanical equipment to permit close observation of all surfaces to

be cleaned and painted. This equipment shall be provided during all phases of the work. Examples of acceptable access structures include:

- Mechanical lifting equipment, such as, scissor trucks, hydraulic booms, etc.
- Platforms suspended from the structure comprised of trusses or other stiff supporting members and including rails and kick boards.
- Simple catenary supports are permitted only if independent life lines for attaching a fall arrest system according to Occupational Safety and Health Administration (OSHA) regulations are provided.

When the surface to be inspected is more than 1.8 m (6 ft) above the ground or water surface, the Contractor shall provide the Engineer with a safety harness and a lifeline according to OSHA regulations. The lifeline and attachment shall not direct the fall into oncoming traffic. The Contractor shall provide a method of attaching the lifeline to the structure independent of the inspection facility or any support of the platform. When the inspection facility is more than 800 mm (2 1/2 ft) above the ground, the Contractor shall provide an approved means of access onto the platform.

The Contractor shall provide artificial lighting in areas where natural light is inadequate, as determined by the Engineer, to allow proper cleaning, inspection, and painting. Illumination for inspection shall be at least 325 LUX (30 foot candles). Illumination for cleaning and painting, including the working platforms, access, and entryways shall be at least 215 LUX (20 foot candles).

Construction Requirements. The Contractor shall be responsible for any damage caused to persons, vehicles, or property, except as indemnified by the Response Action Contractor Indemnification Act. Whenever the intended purposes of the protective devices are not being accomplished, as determined by the Engineer, work shall be immediately suspended until corrections are made. Painted surfaces damaged by any Contractor's operation shall be removed and repainted, as directed by the Engineer, at the Contractor's expense.

Surface and Weather Conditions. Surfaces to be painted after cleaning shall remain free of moisture and other contaminants. The Contractor shall control his/her operations to insure that dust, dirt, or moisture does not come in contact with surfaces cleaned or painted that day.

The surface temperature shall be at least 3°C (5°F) above the dew point during final surface preparation operations. The paint manufacturers' published literature shall be followed for specific temperature, dew point, and humidity restrictions during the application of each coat.

The Contractor shall monitor temperature, dew point, and humidity every 4 hours during surface preparation and coating application in the specific areas where the work is being performed. The frequency of monitoring shall increase if weather conditions are changing. The Engineer has the right to reject any work that was performed under unfavorable weather conditions. Rejected work shall be removed, recleaned, and repainted at the Contractor's expense.

Seasonal Restrictions on Field Cleaning and Painting. Field cleaning and painting work shall be accomplished between April 15 and October 31 unless authorized otherwise by the Engineer in writing.

Inorganic Zinc-rich Waterborne Acrylic Paint system.

In the shop, all structural steel designated to be painted shall be given one coat of inorganic zinc rich primer. Before the application of the intermediate coat, the prime coat and any newly installed fasteners shall be spot solvent cleaned per SSPC-SP 1 and all surfaces pressure washed to remove dirt, oil, lubricants, oxidation products, and foreign substances. Washing shall involve the use of potable water at a pressure between 7 MPa (1000 psi) and 34 MPa (5000 psi) and according to "Low Pressure Water Cleaning" of SSPC-SP12. Paint spray equipment shall not be used to perform the water cleaning. All damaged shop primed areas shall then be spot cleaned per SSPC-SP3 and spot primed with aluminum epoxy mastic. The structural steel shall then receive one full intermediate coat and one full topcoat of waterborne acrylic paint.

a) Paint drips, spills, and overspray must be controlled. If containment is used to control paint drips, spills, and overspray, the containment shall be dropped and all equipment secured when sustained wind speeds of 64 kph (40 mph) or greater occur. When the protective coverings need to be attached to the structure, they shall be attached by bolting, clamping, or similar means. Welding or drilling into the structure is prohibited unless approved by the Engineer in writing.

b) Coating Dry Film Thickness (dft), measured according to SSPC-PA2:
   Zinc Primer: 75 microns (3 mils) min., 150 microns (6 mils) max.
   Epoxy Mastic: 125 microns (5 mils) min., 180 microns (7 mils) max.
   Intermediate Coat: 50 microns (2 mils) min., 100 microns (4 mils) max.
   Topcoat: 50 microns (2 mils) min., 100 microns (4 mils) max.

   The total dry film thickness, excluding the spot areas touched up with epoxy mastic, shall be between 180 and 355 microns (7 and 14 mils).

c) When specified on the plans, or as requested by the Contractor and approved by the Engineer, the waterborne acrylic intermediate and topcoat shall be applied in the shop. The inorganic zinc rich primer shall be tested for proper cure per ASTM D 4752-87 "Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc Rich Primers By Solvent Rub" with a minimum resistance rating of 4 prior to application of the intermediate coat. The pressure washing requirement above may be waived if the QC and QA Inspectors verify the primed surfaces have not been contaminated.

   Erection and handling damage to the shop applied system shall be spot cleaned using SSPC-SP3. The cleaned areas shall be spot painted with a penetrating sealer as recommended by the manufacturer, which shall overlap onto the existing topcoat. Then the aluminum epoxy mastic shall be spot applied not to go beyond the area painted with the

sealer. The acrylic intermediate and topcoat shall be spot applied to the mastic with at least a 150 mm (6 inch) overlap onto the existing topcoat.

The paint manufacturer's product data sheets shall be available for QA review in the shop and submitted to the Engineer prior to start of field work. The requirements outlined in the data sheets shall be followed.

Special Instructions.
Painting Date/System Code. At the completion of the work, the Contractor shall stencil in contrasting color paint the date of painting the bridge, the painting Contractors name, and the paint type code from the Structure Information and Procedure Manual for the system used. The letters shall be capitals, not less than 50 mm (2 in.) and not more than 75 mm (3 in.) in height.

The stencil shall contain the following wording "PAINTED BY (insert the name of the painting Contractor)" and shall show the month and year in which the painting was completed, followed by "CODE S" all stenciled on successive lines. This information shall be stenciled on the cover plate of a truss end post near the top of the railing, or on the outside face of an outside stringer near both ends of the bridge facing traffic, or at some equally visible surface designated by the Engineer.

Method of Measurement. Shop cleaning and painting new structures will not be measured for payment. Field cleaning and painting will not be measured for payment except when performed under a contract that contains a separate pay item for this work.

Basis of Payment. This work will be paid for according to Article 506.07.

TEMPORARY SHEET PILING
Effective: September 2, 1994
Revised: December 13, 2002

Description. This work shall consist of furnishing, driving, adjusting for stage construction when required and subsequent removal of the sheet piling according to the dimensions and details shown on the plans and according to the applicable portions of Section 512 of the Standard Specifications.

This work shall also include furnishing, installing and subsequent removal of all miscellaneous steel shapes, plates and connecting hardware when required to attach the sheeting to an existing substructure unit and/or to facilitate stage construction.

General. The Contractor may propose other means of supporting the sides of the excavation provided they are done so at no extra cost to the department. If the Contractor elects to vary from the design requirements shown on the plans, the revised design calculations and details shall be submitted to the Engineer for approval. The calculations shall be prepared and sealed by an Illinois Licensed Structural Engineer. This approval will not relieve the Contractor of responsibility for the safety of the excavation. Approval shall be contingent upon acceptance by all involved utilities and/or railroads.

Material. The sheet piling shall be made of steel and may be new or used material, at the option of the Contractor. The sheet piling shall have a minimum section modulus as shown on the plans or in the approved Contractor's alternate design. The sheeting shall have a minimum yield strength of 265 MPa (38.5 ksi) unless otherwise specified. The sheeting, used by the Contractor, shall be identifiable and in good condition free of bends and other structural defects. The Contractor shall furnish a copy of the published sheet pile section properties to the Engineer for verification purposes. The Engineer's approval will be required prior to driving any sheeting. All driven sheeting not approved by the Engineer shall be removed at the Contractor's expense.

Construction. The Contractor shall verify locations of all underground utilities before driving any sheet piling. Any disturbance or damage to existing structures, utilities or other property, caused by the Contractor's operation, shall be repaired by the Contractor in a manner satisfactory to the Engineer at no additional cost to the Department. The Contractor shall be responsible for determining the appropriate equipment necessary to drive the sheeting to the tip elevation(s) specified on the plans or according to the Contractor's approved design. The sheet piling shall be driven, as a minimum, to the tip elevation(s) specified, prior to commencing any related excavation. If unable to reach the minimum tip elevation, the adequacy of the sheet piling design will require re-evaluation by the Department prior to allowing excavation adjacent to the sheet piling in question. The Contractor shall not excavate below the maximum excavation line shown on the plans without the prior permission of the Engineer. The sheet piling shall remain in place until the Engineer determines it is no longer required.

The sheet piling shall be removed and disposed of by the Contractor when directed by the Engineer. When allowed, the Contractor may elect to cut off a portion of the sheet piling leaving the remainder in place. The remaining sheet piling shall be a minimum of 300 mm (12 in.) below

the finished grade or as directed by the Engineer. Removed sheet piling shall become the property of the Contractor.

When an obstruction is encountered, the Contractor shall notify the Engineer and upon concurrence of the Engineer, the Contractor shall begin working to break up, push aside, or remove the obstruction. An obstruction shall be defined as any object (such as but not limited to, boulders, logs, old foundations etc.) where it's presence was not obvious or specifically noted on the plans prior to bidding, that cannot be driven through or around with normal driving procedures, but requires additional excavation or other procedures to remove or miss the obstruction.

Method of Measurement. The temporary sheet piling will be measured for payment in place in square meters (square feet). Any temporary sheet piling cut off, left in place, or driven to dimensions other than those shown on the contract plans without the written permission of the Engineer, shall not be measured for payment but shall be done at the contractor's expense.

If the Contractor is unable to drive the sheeting to the specified tip elevation(s) and can demonstrate that any further effort to drive it would only result in damaging the sheeting, then the Contractor shall be paid based on the plan quantity of temporary sheeting involved. However, no additional payment will be made for any walers, bracing, or other supplement to the temporary sheet piling, which may be required as a result of the re-evaluation in order to insure the original design intent was met.

Basis of Payment. This work will be paid for at the contract unit price per square meter (square foot) for TEMPORARY SHEET PILING.

Payment for any excavation performed in conjunction with this work will not be included in this item but shall be paid for as specified elsewhere in this contract.

Obstruction mitigation shall be paid for according to Article 109.04 of the Standard Specifications.

PRECAST CONCRETE STRUCTURES
Effective: September 12, 2003

Revise the tables for Maximum Allowable Dimensional Tolerances For Precast, Prestressed Concrete I-Beams and Bulb T-Beams in Article 504.06(d) to read:

Maximum Allowable Dimensional Tolerances For Precast, Prestressed Concrete I-Beams and Bulb T-Beams (Metric) mm.	
Depth (flanges, web and fillets)	± 5
Depth (overall)	+ 5 to – 3
Width (flanges and fillets)	± 5
Width (web)	+ 5 to – 3
Length	+ 3 per 3 m, Max. + 15 to – 20
Square Ends (deviation from square)	± 5
Skew Ends (deviation from tangent offset)	± 5
Side Insert (spacing between centers of inserts and from the centers of inserts to the ends of the beams)	± 15
Bearing Plates (spacing between the centers of bearing plates)	± 15
Bearing Plate (spacing between the centers of Bearing plates to the ends of the beams)	± 5
Bearing Plate or Bearing Area (variation from a true horizontal plane or from a plane surface when tested with a straightedge)	± 2
Stirrup Bars (extension above top of the beam)	0 to – 10
Stirrup Bars longitudinal spacing	
Within a distance equal to the depth of the member and measured from the end of the member	+ 25
In all other locations	+ 50
The number of stirrups shall not be less than the required number in each length. Additional stirrups may be added when the maximum allowable tolerance is exceeded provided the minimum clearance between stirrups is not less than 50 mm.	
End Stirrup Bars - not more than 50 mm from the end of the beam	
Horizontal Alignment (deviation from a straight line parallel to the centerline of the beam)	± 3 per 3 m, Max, ± 30

Maximum Allowable Dimensional Tolerances For Precast, Prestressed Concrete I-Beams and Bulb T-Beams (English)	In.
Depth (flanges, web and fillets)	± 1/4
Depth (overall)	+ 1/4 to - 1/8
Width (flanges and fillets)	± 1/4
Width (web)	+ 1/4 to - 1/8
Length	+ 1/8 per 10', Max. + 1/2 to - 3/4
Square Ends (deviation from square)	± 1/4
Skew Ends (deviation from tangent offset)	± 1/4
Side Insert (spacing between centers of inserts and from the centers of inserts to the ends of the beams)	± 1/2
Bearing Plates (spacing between the centers of bearing plates)	± 1/2
Bearing Plate (spacing between the centers of bearing plates to the ends of the beams)	± 1/4
Bearing Plate or Bearing Area (variation from a true horizontal plane or from a plane surface when tested with a straightedge)	± 1/16
Stirrup Bars (extension above top of the beam)	0 to – 3/8
Stirrup Bars longitudinal spacing	
Within a distance equal to the depth of the member and measured from the end of the member	+ 1
In all other locations	+ 2
The number of stirrups shall not be less than the required number in each length. Additional stirrups may be added when the maximum allowable tolerance is exceeded provided the minimum clearance between stirrups is not less than 2 in.	
End Stirrup Bars - not more than 2 in. from the end of the beam	
Horizontal Alignment (deviation from a straight line parallel to the centerline of the beam)	± 1/8 per 10', Max. ± 1 1/4

REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS

I. GENERAL

1. These contract provisions shall apply to all word performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract.

2. Except as otherwise provided for in each section, the contractor shall insert in each subcontract all of the stipulations contained in these Required Contract Provisions, and further require their inclusion in any lower tier subcontract or purchase order that may in turn be made. The Required Contract Provisions shall not be incorporated by reference in any case. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with these Required Contract Provisions.

3. A breach of any of the stipulations contained in these Required Contract Provisions shall be sufficient grounds for termination of the contract.

4. A breach of the following clauses of the Required Contract Provisions may also be grounds for debarment as provided in 29 CFR 5.12:

Section I, paragraph 2;
Section IV, paragraphs 1, 2, 3, 4 and 7;
Section V, paragraphs 1 and 2a through 2g.

5. Disputes arising out of the labor standards provisions of Section IV (except paragraph 5) and Section V of these Required Contract Provisions shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the U.S. Department of Labor (DOL) as set forth in 29 CFR 5, 6 and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the DOL, or the contractor's employees or their representatives.

6. Selection of Labor: During the performance of this contract, the contractor shall not:

a. Discriminate against labor from any other State, possession, or territory of the United States (except for employment preference for Appalachian contracts, when applicable, as specified in Attachment A), or

b. Employ convict labor for any purpose within the limits of the project unless it is labor performed by convicts who are on parole, supervised release, or probation.

II. NONDISCRIMINATION

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

1. Equal Employment Opportunity: Equal employment opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (28 CFR 35, 29 CFR 1630 and 41 CFR 60 (and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140 shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The Equal Opportunity Construction Contract Specifications set forth under 41 CFR 60-4.3 and the provisions of the American Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR 35 and 29 CFR 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the State highway agency (SHA) and the Federal Government in carrying out EEO obligations and in their review of his/her activities under the contract.

b. The contractor will accept as his operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, preapprenticeship, and/or on-the-job-training."

2. EEO Officer: The contractor will designate and make known to the SHA contracting officers an EEO Officer who will have the responsibility for an must be capable of effectively administering and promoting an active contractor program of EEO and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action, or who are substantially involved in such action, will be made fully cognizant of, and will implement, the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above

agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minority group employees.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minority groups in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employees referral sources likely to yield qualified minority group applicants. To meet this requirement, the contractor will identify sources of potential minority group employees, and establish which such identified sources procedures whereby minority group applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, he is expected to observe the provisions of that agreement to the extent that the system permits the contractor's compliance with EEO contract provisions. (The DOL has held that where implementation of such agreements have the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Executive Order 11246, as amended.)

c. The contractor will encourage his present employees to refer minority group applicants for employment. Information and procedures with regard to referring minority group applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to insure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with his obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of his avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minority group and women employees, and applicants for employment.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs, i.e., apprenticeship, and on-the-job training programs for the geographical area of contract performance. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training. In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision.

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of minority group and women employees and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use his/her best efforts to obtain the cooperation of such unions to increase opportunities for minority groups and women within the unions, and to effect referrals by such unions of minority and female employees. Actions by the contractor either directly or through a contractor's association acting as agent will include the procedures set forth below:

a. The contractor will use best efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minority group members and women for membership in the unions and increasing the skills of minority group employees and women so that they may qualify for higher paying employment.

b. The contractor will use best efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, national origin, age or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to

the SHA and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of minority and women referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, national origin, age or disability; making full efforts to obtain qualified and/or quallifiable minority group persons and women. (The DOL has held that it shall be no excuse that the union with which the contractor has a collective bargaining agreement providing for exclusive referral failed to refer minority employees.) In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the SHA.

8. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, national origin, age or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment.

a. The contractor shall notify all potential subcontractors and suppliers of his/her EEO obligations under this contract.

b. Disadvantaged business enterprises (DBE), as defined in 49 CFR 23, shall have equal opportunity to compete for and perform subcontracts which the contractor enters into pursuant to this contract. The contractor will use his best efforts to solicit bids from and to utilize DBE subcontractors or subcontractors with meaningful minority group and female representation among their employees. Contractors shall obtain lists of DBE construction firms from SHA personnel.

c. The contractor will use his best efforts to ensure subcontractor compliance with their EEO obligations.

9. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following completion of the contract work and shall be available at reasonable times and places for inspection by authorized representatives of the SHA and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women;

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minority and female employees; and

(4) The progress and efforts being made in securing the services of DBE subcontractors or subcontractors with meaningful minority and female representation among their employees.

b. The contractors will submit an annual report to the SHA each July for the duration of the project, indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on Form FHWA-1391. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data.

III. NONSEGREGATED FACILITIES

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $10,000 or more.)

a. By submission of this bid, the execution of this contract or subcontract, or the consummation of this material supply agreement or purchase order, as appropriate, the bidder, Federal-aid construction contractor, subcontractor, material supplier, or vendor, as appropriate, certifies that the firm does not maintain or provide for its employees any segregated facilities at any of its establishments, and that the firm does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The firm agrees that a breach of this certification is a violation of the EEO provisions of this contract. The firm further certifies that no employee will be denied access to adequate facilities on the basis of sex or disability.

b. As used in this certification, the term "segregated facilities" means any waiting rooms, work areas, restrooms and washrooms, restaurants and other eating areas, timeclocks, locker rooms, and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees which are segregated by explicit directive, or are, in fact, segregated on the basis of race, color, religion, national origin, age or disability, because of habit, local custom, or otherwise. The only exception will be for the disabled when the demands for accessibility override (e.g. disabled parking).

c. The contractor agrees that it has obtained or will obtain identical certification from proposed subcontractors or material suppliers prior to award of subcontracts or consummation of material supply agreements of $10,000 or more and that it will retain such certifications in its files.

IV. PAYMENT OF PREDETERMINED MINIMUM WAGE

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural minor collectors, which are exempt.)

1. General:

a. All mechanics and laborers employed or working upon the site of the work will be paid unconditionally and not less often than once a week and without subsequent deduction or rebate on any account [except such payroll deductions as are permitted by regulations (29 CFR 3) issued by the Secretary of Labor under the Copeland Act (40 U.S.C. 276c)] the full amounts of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment. The payment shall be computed at wage rates not less than those contained in the wage determination of the Secretary of Labor (hereinafter "the wage determination") which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the

contractor or its subcontractors and such laborers and mechanics. The wage determination (including any additional classifications and wage rates conformed under paragraph 2 of this Section IV and the DOL poster (WH-1321) or Form FHWA-1495) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. For the purpose of this Section, contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act (40 U.S.C. 276a) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of Section IV, paragraph 3b, hereof. Also, for the purpose of this Section, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in paragraphs 4 and 5 of this Section IV.

b. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein, provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed.

c. All rulings and interpretations of the Davis-Bacon Act and related acts contained in 29 CFR 1, 3, and 5 are herein incorporated by reference in this contract.

2. Classification:

a. The SHA contracting officer shall require that any class of laborers or mechanics employed under the contract, which is not listed in the wage determination, shall be classified in conformance with the wage determination.

b. The contracting officer shall approve an additional classification, wage rate and fringe benefits only when the following criteria have been met:

(1) the work to be performed by the additional classification requested is not performed by a classification in the wage determination;

(2) the additional classification is utilized in the area by the construction industry;

(3) the proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination; and

(4) with respect to helpers, when such a classification prevails in the area in which the work is performed.

c. If the contractor or subcontractors, as appropriate, the laborers and mechanics (if known) to be employed in the additional classification or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the DOL, Administrator of the Wage and Hour Division, Employment Standards Administration, Washington, D.C. 20210. The Wage and Hour Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

d. In the event the contractor or subcontractors, as appropriate, the laborers or mechanics to be employed in the additional classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the question, including the views of all interested parties and the recommendation of the contracting officer, to the Wage and Hour Administrator for determination. Said Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advised the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

e. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 2c or 2d of this Section IV shall be paid to all workers performing work in the additional classification from the first day on which work is performed in the classification.

3. Payment of Fringe Benefits:

a. Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor or subcontractors, as appropriate, shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly case equivalent thereof.

b. If the contractor or subcontractor, as appropriate, does not make payments to a trustee or other third person, he/she may consider as a part of the wages of any laborer or mechanic the amount of any cost reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

4. Apprentices and Trainees (Programs of the U.S. DOL) and Helpers:

a. Apprentices:

(1) Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the DOL, Employment and Training Administration, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau, or if a person is employed in his/her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Bureau of Apprenticeship and Training or a State apprenticeship agency (where appropriate) to be eligible for probationary employment as an apprentice.

(2) The allowable ratio of apprentices to journeyman-level employees on the job site in any craft classification shall not

be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any employee listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate listed in the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor or subcontractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman-level hourly rate) specified in the contractor's or subcontractor's registered program shall be observed.

(3) Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator for the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination.

(4) In the event the Bureau of Apprenticeship and Training, or a State apprenticeship agency recognized by the Bureau, withdraws approval of an apprenticeship program, the contractor or subcontractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the comparable work performed by regular employees until an acceptable program is approved.

b. Trainees:

(1) Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the DOL, Employment and Training Administration.

(2) The ratio of trainees to journeyman-level employees on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(3) Every trainee must be paid at not less than the rate specified in the approved program for his/her level of progress, expressed as a percentage of the journeyman-level hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman-level wage rate on the wage determination which provides for less than full fringe benefits for apprentices, in which cases such trainees shall receive the same fringe benefits as apprentices.

(4) In the event the Employment and Training Administration withdraws approval of a training program, the contractor or subcontractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

c. Helpers:
Helpers will be permitted to work on a project if the helper classification is specified and defined on the applicable wage determination or is approved pursuant to the conformance procedure set forth in Section IV. 2. Any worker listed on a payroll at a helper wage rate, who is not a helper under a approved definition, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed.

5. Apprentices and Trainees (Programs of the U.S. DOT):

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeymen shall not be greater than permitted by the terms of the particular program.

6. Withholding:

The SHA shall upon its own action or upon written request of an authorized representative of the DOL withhold, or cause to be withheld, from the contractor or subcontractor under this contract or any other Federal contract with the same prime contractor or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements which is held by the same prime contractor, as much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainee's and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, the SHA contracting officer may, after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

7. Overtime Requirements:

No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers, mechanics, watchmen, or guards (including apprentices, trainees, and helpers described in paragraphs 4 and 5 above) shall require or permit any laborer, mechanic, watchman, or guard in any workweek in which he/she is employed on such work, to work in excess of 40 hours in such workweek unless such laborer, mechanic, watchman, or guard receives compensation at a rate not less than one-and-one-half times his/her basic rate of pay for all hours worked in excess of 40 hours in such workweek.

8. Violation:

Liability for Unpaid Wages; Liquidated Damages: In the event of any violation of the clause set forth in paragraph 7 above, the contractor and any subcontractor responsible thereof shall be liable to the affected employee for his/her unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory) for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer, mechanic, watchman, or guard employed in violation of the clause set forth in paragraph 7, in the sum of $10 for each calendar day on which such employee was required or permitted to work in excess of the standard work week of 40 hours without payment of the overtime wages required by the clause set forth in paragraph 7.

9. Withholding for Unpaid Wages and Liquidated Damages:

The SHA shall; upon its own action or upon written request of any authorized representative of the DOL withhold, or cause to be withheld, from any monies payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph 8 above.

V. STATEMENTS AND PAYROLLS

(Applicable to all Federal-aid construction contracts exceeding $2,000 and to all related subcontracts, except for projects located on roadways classified as local roads or rural collectors, which are exempt.)

1. Compliance with Copeland Regulations (29 CFR 3):

The contractor shall comply with the Copeland Regulations of the Secretary of Labor which are herein incorporated by reference.

2. Payrolls and Payroll Records:

a. Payrolls and basic records relating thereto shall be maintained by the contractor and each subcontractor during the course of the work and preserved for a period of 3 years from the date of completion of the contract for all laborers, mechanics, apprentices, trainees, watchmen, helpers, and guards working at the site of the work.

b. The payroll records shall contain the name, social security number, and address of each such employee; his or her correct classification; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalent thereof the types described in Section 1(b)(2)(B) of the Davis Bacon Act); daily and weekly number of hours worked; deductions made; and actual wages paid. In addition, for Appalachian contracts, the payroll records shall contain a notation indicating whether the employee does, or does not, normally reside in the labor area as defined in Attachment A, paragraph 1. Whenever the Secretary of Labor, pursuant to Section IV, paragraph 3b, has found that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section 1(b)(2)(B) of the Davis Bacon Act, the contractor and each subcontractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, that the plan or program has been communicated in writing to the laborers or mechanics affected, and show the cost anticipated or the actual cost incurred in providing benefits. Contractors or subcontractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprentices and trainees, and ratios and wage rates prescribed in the applicable programs.

c. Each contractor and subcontractor shall furnish, each week in which any contract work is performed, to the SHA resident engineer a payroll of wages paid each of its employees (including apprentices trainees, and helpers, described in Section IV, paragraphs 4 and 5, and watchmen and guards engaged on work during the preceding weekly payroll period).

The payroll submitted shall set out accurately and completely all of the information required to be maintained under paragraph 2b of this Section V.

This information may be submitted in any form desired. Optional Form WH-347 is available for this purpose and may be purchased from the Superintendent of Documents (Federal stock number 029-005-0014-1), U.S. Government Printing Office, Washington, D.C. 20402. The prime contractor is responsible for the submission of copies of payrolls by all suncontractors.

d. Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his/her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) that the payroll for the payroll period contains the information required to be maintained under paragraph 2b of this Section V and that such information is correct and complete;

(2) that such laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in the Regulations, 29 CFR 3;

(3) that each laborer or mechanic has been paid not less that the applicable wage rate and fringe benefits or cash equivalent for the classification of worked performed, as specified in the applicable wage determination incorporated into the contract.

e. The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 2d of this Section V.

f. The falsification of any of the above certifications may subject the contractor to civil or criminal prosecution under 18 U/S. C. 1001 and 31 U.S.C. 231.

g. The contractor or subcontractor shall make the records required under paragraph 2b of this Section V available for

inspection, copying, or transcription by authorized representatives of the SHA, the FHWA, or the DOL, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the SHA, the FHWA, the DOL, or all may, after written notice to the contractor, sponsor, applicant, or owner, take such actions as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

VI. RECORD OF MATERIALS, SUPPLIES, AND LABOR

1. On all federal-aid contracts on the national highway system, except those which provide solely for the installation of protective devices at railroad grade crossings, those which are constructed on a force account or direct labor basis, highway beautification contracts, and contracts for which the total final construction cost for roadway and bridge is less than $1,000,000 (23 CFR 635) the contractor shall:

a. Become familiar with the list of specific materials and supplies contained in Form FHWA-47, "Statement of Materials and Labor Used by Contractor of Highway Construction Involving Federal Funds," prior to the commencement of work under this contract.

b. Maintain a record of the total cost of all materials and supplies purchased for and incorporated in the work, and also of the quantities of those specific materials and supplies listed on Form FHWA-47, and in the units shown on Form FHWA-47.

c. Furnish, upon the completion of the contract, to the SHA resident engineer on /Form FHWA-47 together with the data required in paragraph 1b relative to materials and supplies, a final labor summary of all contract work indicating the total hours worked and the total amount earned.

2. At the prime contractor's option, either a single report covering all contract work or separate reports for the contractor and for each subcontract shall be submitted.

VII. SUBLETTING OR ASSIGNING THE CONTRACT

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in he contract) of the total original contract price, excluding any specialty items designated by the State. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted form the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635).

a. "Its own organization" shall be construed to include only workers employed and paid directly by the prime contractor and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor, assignee, or agent of the prime contractor.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid on the contract as a whole and in general are to be limited to minor components of the overall contract.

2. The contract amount upon which the requirements set forth in paragraph 1 of Section VII is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. The contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the SHA contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the SHA contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract.

Written consent will be given only after the SHA has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract.

VIII. SAFETY: ACCIDENT PREVENTION

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the SHA contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and health standards (29 CFR 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S. C. 333).

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 333).

IX. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification,

distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, the following notice shall be posted on each Federal-aid highway project (23 CFR 635) in one or more places where it is readily available to all persons concerned with the project:

NOTICE TO ALL PERSONNEL ENGAGED ON FEDERAL-AID HIGHWAY PROJECTS

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 1, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined not more than $10,000 or imprisoned not more than 5 years or both."

X. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT

(Applicable to all Federal-aid construction contracts and to all related subcontracts of $100,000 or more).

By submission of this bid or the execution of this contract, or subcontract, as appropriate, the bidder, Federal-aid construction contractor, or subcontractor, as appropriate, will be deemed to have stipulated as follows:

1. That any facility that is or will be utilized in the performance of this contract, unless such contract is exempt under the Clean Air Act, as amended (42 U.S.C. 1857 et seq., as amended by Pub.L. 91-604), and under the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251 et seq., as amended by Pub.L. 92-500), Executive Order 11738, and regulations in implementation thereof (40 CFR 15) is not listed, on the date of contract award, on the U.S. Environmental Protection Agency (EPA) List of Violating Facilities pursuant to 40 CFR 15.20.

2. That the firm agrees to comply and remain in compliance with all the requirements of Section 114 of the Clean Air Act and Section 308 of the Federal Water Pollution Control Act and all regulations and guidelines listed thereunder.

3. That the firm shall promptly notify the SHA of the receipt of any communication from the Director, Office of Federal Activities, EPA indicating that a facility that is or will be utilized for the contract is under consideration to be listed on the EPA List of Violating Facilities.

4. That the firm agrees to include or cause to be included the requirements of paragraph 1 through 4 of this Section X in every nonexempt subcontract, and further agrees to take such action as the government may direct as a means of enforcing such requirements.

XI. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

1. Instructions for Certification - Primary Covered Transactions:

(Applicable to all Federal-aid contracts - 49 CFR 29)

a. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.

b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction.

c. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.

d. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.

e. The terms "covered transaction," "debarred," "suspended," "ineligible,""lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is submitted for assistance in obtaining a copy of those regulations.

f. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.

g. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled

"Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the nonprocurement portion of the "Lists of Parties Excluded from Federal Procurement or Nonprocurement Programs" (Nonprocurement List) which is compiled by the General Services Administration.

i. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph f of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

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Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Primary Covered Transactions

1. The prospective primary participant certifies to the best of its knowledge and belief, that it and its principals:

a. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;

b. Have not within a 3-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

c. Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph 1b of this certification; and

d. Have not within a 3-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

2. Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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2. Instructions for Certification - Lower Tier Covered Transactions:

(Applicable to all subcontracts, purchase orders and other lower tier transactions of $25,000 or more - 49 CFR 29)

a. By signing and submitting this proposal, the prospective lower tier is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "primary covered transaction," "participant," "person," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of rules implementing Executive Order 12549. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations.

e. The prospective lower tie participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealing.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment.

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Certification Regarding Debarment, Suspension, Ineligibility And Voluntary Exclusion-Lower Tier Covered Transactions:

1. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

2. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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XII. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

(Applicable to all Federal-aid construction contracts and to all related subcontracts which exceed $100,000 - 49 CFR 20)

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than $10,000 and not more than $100,000 for each such failure.

3. The prospective participant also agrees by submitting his or her bid or proposal that he or she shall require that the language of this certification be included in all lower tier subcontracts, which exceed $100,000 and that all such recipients shall certify and disclose accordingly.

MINIMUM WAGES FOR FEDERAL AND FEDERALLY ASSISTED CONSTRUCTION CONTRACTS

This project is funded, in part, with Federal-aid funds and, as such, is subject to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Sta. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in a 29 CFR Part 1, Appendix A, as well as such additional statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act and pursuant to the provisions of 29 CFR Part 1. The prevailing rates and fringe benefits shown in the General Wage Determination Decisions issued by the U.S. Department of Labor shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

General Wage Determination Decisions, modifications and supersedes decisions thereto are to be used in accordance with the provisions of 29 CFR Parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made a part of every contract for performance of the described work within the geographic area indicated as required by an applicable DBRA Federal prevailing wage law and 29 CFR Part 5. The wage rates and fringe benefits contained in the General Wage Determination Decision

NOTICE

The most current **General Wage Determination Decisions** (wage rates) are available on the IDOT web site. They are located on the Letting and Bidding page at http://www.dot.state.il.us/desenv/delett.html.

In addition, ten (10) days prior to the letting, the applicable Federal wage rates will be e-mailed to subscribers. It is recommended that all contractors subscribe to the Federal Wage Rates List or the Contractor's Packet through IDOT's subscription service.

PLEASE NOTE: if you have already subscribed to the Contractor's Packet you will automatically receive the Federal Wage Rates.

The instructions for subscribing are at http://www.dot.state.il.us/desenv/subsc.html.

If you have any questions concerning the wage rates, please contact IDOT's Chief Contract Official at 217-782-7806.